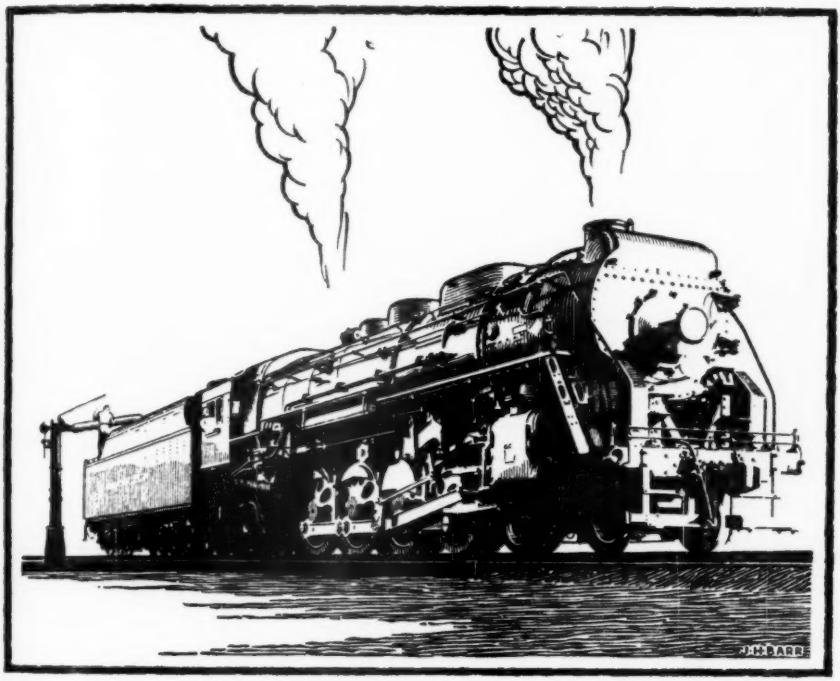
BULLETIN

No. 59



THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

BULLETIN No. 59

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The Railway and Locomotive Historical Society,
INC.

In rounding out the "manifest" for this bulletin your Editor is a bit dubious as to its general appeal. The contribution on the Chicago Tunnel Co., rounds out the two foot gauge railroads in this country, the subject of which was so well handled by Mr. Crittenden in our Bulletin #57. Then, Mr. Donovan in his contribution, has brought the railroad in literature up to date. Those of you who do not own copies of this bulletin published in the summer of 1940 have missed much in the way of value for, our hobby, the railroad, has occupied a very definite place in the field of literature.

We welcome to this bulletin two new contributors whose articles are worthy of your attention. Born in Baltimore, well, a few years ago, Mr. Chaney had the opportunity of first hand observation of the locomotives of the B & O and P. R. R. and subsidiary roads. Recently retired from active service in the Brooklyn Navy Yard, he has outlined briefly by text and drawn to scale the engines making up the Class "P" locomotives of the P. R. R. Mr. Chaney has been an indefatigable student of the "iron horse" and I know of no one who is better informed on early Pennsylvania R. R. motive power. Now that he has reached the retirement age, I hope he will favor us with future contributions. Mr. Allen has also favored us with some of his reminiscences of a busy

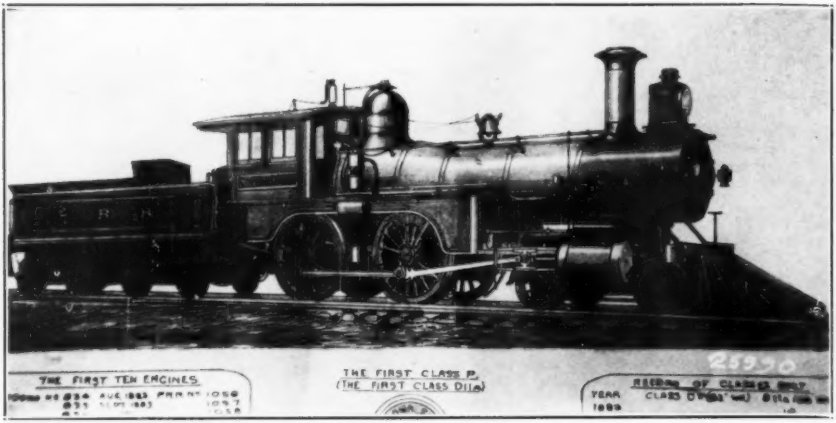
little town in northern New Hampshire, when it was far more active than it is today, sad to relate. The old Portland & Ogdensburg R. R., later the White Mountain Division of the Maine Central R. R., has always been one of the scenic rides in New England. Perhaps in these "gasless and tireless" days of automobiling its beauty and grandeur may be rediscovered.

Mr. Doherty writes of the rise and decline of the railroad shops in his home town and your Editor has made two contributions which he hopes will be of interest. The one on William Henry Paige was completed at the time the copies of the original sleeping car contracts with Mr. Woodruff were received in the Baker Library, the latter placing definitely the time and date that Mr. Woodruff was engaged in this service. The one on our U. S. Military Railroads is one that a number of requests have urged him to attempt but it was only recently that certain documents and the report of Col. McCallum encouraged him to complete the assignment. And lastly, through the efforts of Mr. Mills, we have an account of a reversion to wooden rails with metal strips right in our own country in the twentieth century. Under favorable conditions, the little road might have made good, but, it is rather amusing how time does swing around into a circle.

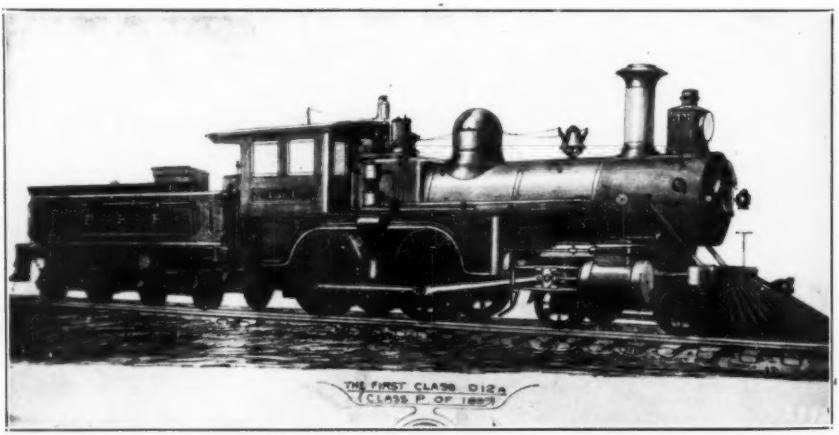
In this bulletin will be found an index of all material published since our Bulletin #51. Space permitting and providing we don't forget, we hope to publish this in the last bulletin each year.

Members in the Armed Forces

To those of our members who have answered the call of defending our country we extend our sincere appreciation and wish them a safe return from this horrible conflict. There are doubtless some members in our armed forces whose names we do not know. For the records of this Society, we would appreciate it if you would advise our Assistant Secretary, Mr. Harold S. Walker, 10 Winthrop Ave., Marblehead, Mass., giving him simply the information that you have already joined or are about to join. At the Annual Meeting of last year your Directors authorized your President to automatically extend such memberships in this Society, without publications, for those who joined the armed forces, thus keeping alive their membership in this Society. Won't you notify Mr. Walker at your first opportunity?



P. R. R. 1056. Class P of 1883, New Class D11A.



P. R. R. 1321. Class P of 1889, New Class D12A.

The Famous Class P Passenger Engines Pennsylvania Railroad

By Charles B. Chaney

In 1881, passenger power on the Pennsylvania R. R. embraced several classes of 4-4-0 type engines, some using soft, some hard coal for fuel, and adapted for express, general, and passenger service. They were all more or less similar to those of other Eastern roads, with their beaded boiler mountings, capped stacks, etc.

The first deviation from common practice occurred in 1881, when two classes were brought out having smooth boiler mountings, fire boxes resting on top of, instead of between the frames, etc. These engines were the famous "K" and "A—anthracite" (later D6 and D7) engines. The class K had 18x24 inch cylinders, and 78 inch driving wheels; the class A-anthracite 17x24 inch cylinders and 68 inch wheels. Each class had 50 inch boilers and were otherwise identical.

In 1883 a new class was brought out, generally similar to the above engines, but of larger and more powerful design, which inaugurated the class P type. It is this class whose long development is here recorded, use being made of the present classification system for easier identification.

Class D 11 a

The first class P (or D 11a) engine, was numbered 1056, and was Altoona shop No. 834, completed in August 1883. It had 18½x24″ cylinders, 68″ drivers, and a wagon-top boiler 54″ diam. with its firebox resting on top of frames, which, between the driving axles sloped downward to the front—the toboggan type. It had alligator cross-heads and two bar guides, and sandbox in the wheel covers. A steam pipe extended upwards within the cab and pierced the roof, with whistle located on top of roof. A coupling bar hung down on the pilot. Subsequently, this coupling bar was replaced by the well-known P. R. R. type of wrought iron coupling or "bull nose," and the whistle was tapped into side of dome.

It will be noted that a pipe led from top of dome—this was the Ashton blow-back safety valve which, at that time, was standard on the P. R. R. It carried the escaping steam back to the tank on tender. Later, this pipe led only to roof of cab, where it tapped into a muffler of the road's design—this remained standard on the road for some years.

The driving wheel base was 7′-9″, which dimension was retained for all subsequent designs of class P engines. The total wheel base was 22½′-8½″, center of boiler was 7′-2½″ above the rail, firebox 41¾″ x 119⅞″, and the boiler contained 240 two-inch tubes. Total heating surface was 1530 sq. ft.

The total weight of engine was 100,600 pounds, of which 67,800 pounds rested on the drivers. The working pressure was 140 pounds to the sq. inch.

From 1883 to 1888, sixty-six of these engines were built, together with twenty having 62″ drivers (class D 11). Most of the D 11 engines being used by the P. W. & B. R. R. and the B. & P. R. R. in fast freight service, with trains of 20 cars, making passenger train speed.

During 1887, a class D 11a engine (Balto. & Potomac No. 317) was put to a test making two round trips daily between Philadelphia and Washington for an entire month, rolling up a mileage of about 17,000. Three engine crews alternated in making this test.

New Class D 12 a

In 1885, a new class of freight engine was brought out, on which the Belpaire boiler was introduced. This boiler proved to be very efficient, and has remained standard in the practice of the P. R. R. to the present time. It was first used in passenger service on the engine described below.

The first modified P (or D 12a) engine was brought out in August 1889—P. R. R. No. 1321, Altoona shop No. 1413. This engine retained the 54″ boiler, with a Belpaire firebox of 40″ x 119¾″, resting on the toboggan frames. The steam pressure was raised to 160 pounds. The dome was located on the middle course of the boiler, without any openings or taps. Over the firebox, on the flat Belpaire top, was an auxiliary dome, which contained two safety valves and the whistle. From this small dome a steam pipe led back into the cab, for supplying the several steam valves therein.

This auxiliary dome was patterned after a similar device on the Webb 3-cylinder compound engine which the P. R. R. imported from England in 1889, and it remained P. R. R. standard for many years, and was also copied by other builders and roads.

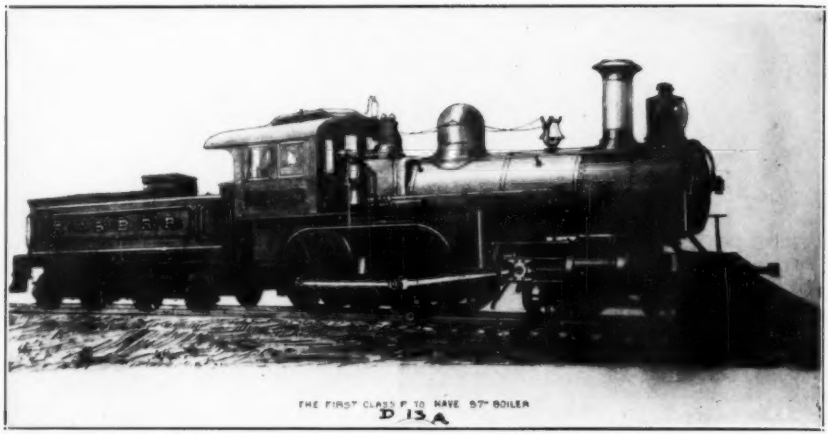
The Belpaire top was stepped up about 6 inches from barrel of boiler; this design developed a weakness at this point and the design was later modified.

The boiler contained 210 two-inch tubes. The total heating surface was 1382 sq. ft. Center of boiler remained at 7′-2½″ from rail. The weight on drivers was 73,350 pounds, total weight 106,500 pounds. Cylinders 18½x24″ and drivers 68″ as on the D 11 a.

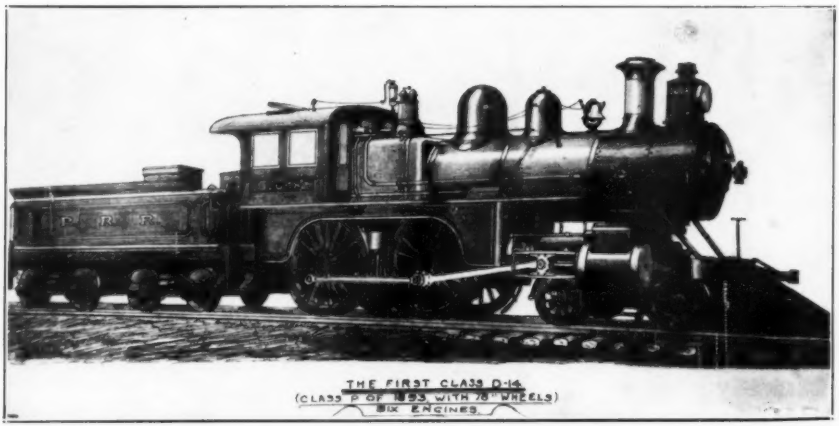
Forty-one of these engines were built 1889-1891, and two others with 62″ drivers (class D 12) were built for the Northern Central Ry.

New Class D 13 a

In 1892, the foregoing class was redesigned with a larger and stronger boiler. The first engine was Altoona shop No. 1754, built June 1892, as P. W. & B. R. R. No. 8. In this class the boiler was enlarged to 57″ diameter, with a flush top joint between the boiler barrel and the Belpaire top. These engines introduced a monitor top cab, which remained standard for a few years. 18½x24″ cylinders and 68″ drivers were retained; the firebox was 40″x119⅝″, boiler contained 258 tubes of 1⅞″ diam., and the total heating surface was 1572 sq. ft.



P. R. R. P. W. & B. R. R. 8. Class P of 1892, New Class D13A.



P. R. R. 1658. Class P of 1893, New Class D-14.

The steam pressure was raised to 175 pounds. The center of boiler was 7′-4″ above the rails. Weight of engine was 112,200 pounds, with 77,200 pounds resting on the drivers.

A few engines with 62″ drivers (class D 13) were built for the N. C. R.

In 1893, a slight modification was made in the boiler of engines thereafter built, thereby changing to classes D 13 b (62″ drivers) and D 13 c (68″ drivers). The D 13 c engine weighed 113,700 pounds.

Of these D 13 classes, there were built from 1892 to 1902 the following:

Class	D 13	two, for N. C. R.
	D 13 a	fifty-four
	D 13 c	ninety-six

While class D 13 b was recorded in diagram and specification sheets, there seems to be no evidence that any were built.

New Class D 14

But six engines of this very handsome class were built—three for the P. R. R. and three for the P. W. & B. R. R.—all built in July 1893. The first one bore P. R. R. No. 1658, and was Juniata Shop No. 249.

These engines returned to a sandbox on top of boiler. They had a dummy Janney coupler on the pilot, and were the first to have engine truck wheel brakes. The old deep, single tone whistle gave way to a new P. R. R. 3-tone chime, but still having the valve lever hanging down from the top. The cab ventilator was of the trap door type. The air brake pump was placed on the left hand side of the boiler. With 78″ wheels, these engines were high steppers.

Their other principal dimensions were 18½x24″ cylinders, 57″ boiler, set 8′-2″ above the rails, same firebox as before, 40″x119¾″, 258 1⅞″ tubes, a heating surface of 1583 sq. ft., 175 pounds working pressure. They weighed 122,600 pounds, of which 82,800 pounds rested on the drivers.

In later years, the three P. R. R. engines had their driving wheels reduced to 68″ diam., thus becoming class D 14 c. The three on the P. W. & B. were never changed.

In April 1904, one of the P. W. & B. engines, No. 5033, exploded her boiler at Halethorpe, Md., destroying the engine and killing the crew.

New Class D 14 a

In 1894, the above class engine was considerably redesigned. The two-bar alligator cross-head and guide gave way to a three-bar type designed by Axel Vogt, mechanical engineer of the road—a type similar to the Dean design on the Old Colony R. R. A shorter pilot was introduced, having a standard M. C. B. coupler. A new design of chime whistle, with valve at the bottom, was employed, and this whistle is still the standard.

These engines introduced the 80″ driving wheels which have ever since been used for all standard high speed passenger engines. The old neat 18″ stack with cap was replaced by a cast, tapered stack having but a 13½″ diameter at the smallest bore or "choke." The exhausts sounded like the bark of a rifle.

A round case headlight extended out from the smokebox on a small cast bracket. The Belpaire firebox still rested on top of frame, but the latter was no longer of the true "toboggan" type; it was horizontal over the rear axle, then had a short inclined drop, thence resumed its horizontal course to the front axle.

The first engine of the class was P. R. R. No. 804—Juniata shop No. 315, completed July 1894. In all, sixteen engines were built, some for the parent road, and some for the P. W. & B. R. R. Eventually all were turned over to the latter road, and in later years all had their driving wheels reduced to 68″ diam., thereby becoming class D 14 b. Also, the smaller diameter stack was soon replaced by an 18″ stack (some having the cap, others being a cast stack with beading at the top), while the round case headlight gave way to the standard square case type, on top of the smokebox.

The driving wheel brakes were no longer the push-down cam type between the wheels. Instead, a new type rigging was introduced, having long heavy levers with brake shoes acting on the forward part of the wheels, with operating cylinders under the cab at the rear.

In these engines the cylinders were changed to 19x24″, and the total wheel base was 22′-9½″, all previous designs having a wheel base 1″ shorter.

The remaining principal dimensions were: 57⅞″ boiler, center line 8′-4″ above rails, a firebox 40″x119¾″, 258 tubes 1⅞″ diam., total heating surface 1583 sq. ft. The working pressure was 175 pounds. Weight on drivers, 87,300 pounds, total weight 127,050 pounds.

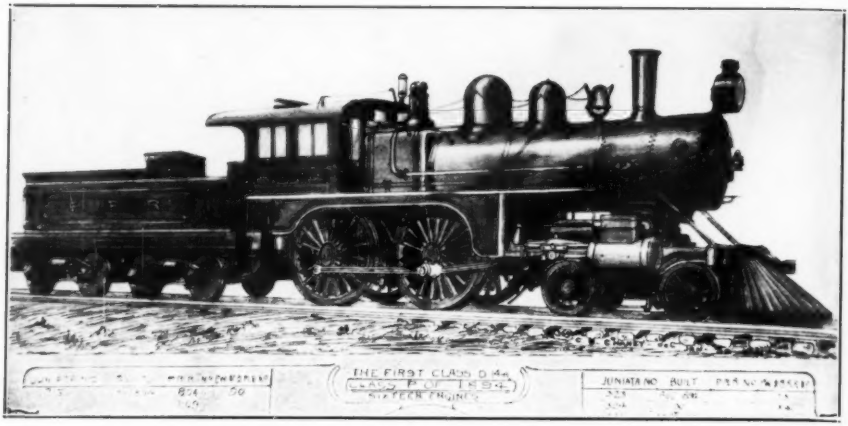
New Class D 16 a

We now come to the final development of the class P engines; a beautiful, powerful and sturdy locomotive, of which, divided into several sub-classes, a grand total of 429 were built from 1895 to 1910.

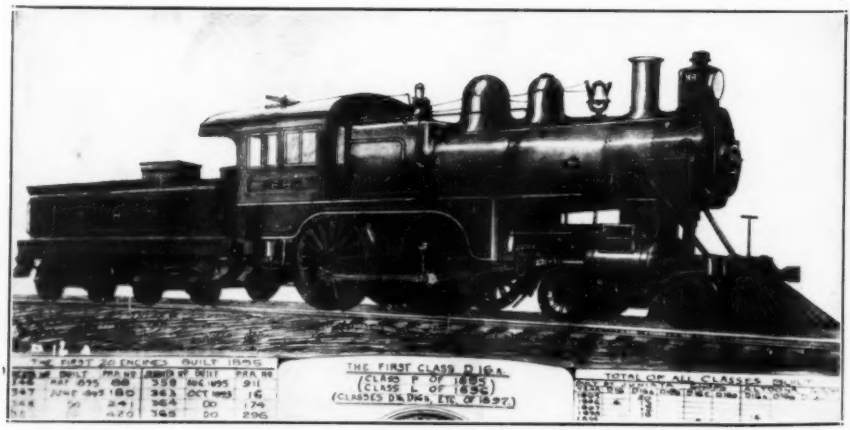
The previously described class of engine (class P of 1894, new class D 14 a) was radically redesigned under the classification of "P design of 1895." The first engine, P. R. R. No. 88, Juniata shop No. 345, was completed in May 1895. The total wheel base of 22′-9½″ and the 80″ drivers were retained, but the cylinders were made 18½″x26″—an increase in stroke of 2 inches.

The boiler was 60″ diameter at the front end, and this section was conical, increasing in diameter to 68″, where it met the dome course which was cylindrical. The sides of the Belpaire section bulged out to meet the increased diameter of the dome course, these sides being gradually flattened out towards the rear.

The Vogt guides were improved by having the sides completely encase the cross-head, thereby excluding cinders and dust from the



P. R. R. 804. Class P of 1894, New Class D-14A.



P. R. R. 88. Class P of 1895, Later Class L. New Class D16A.

bearing surfaces. The driving brake rigging of the D 14 a engine was retained.

Other dimensions were: center line of boiler 8'-11½" above rail; firebox 40x119⅝"; 310 tubes, 1⅞" diam. Working pressure 185 pounds. Total heating surface 1918 sq. ft. Weight on drivers, 93,100 pounds, total weight 134,500 pounds.

In all previous designs of "P" engines the boiler had run through the cab; but in the D 16 a class the cab was located farther back, making it an open cab with footplate.

On March 24, 1902, Engineer Martin H. Lee, with D 16 a engine No. 804, hauling President Cassatt's car and one coach, crossed the division, Broad Street to Jersey City, 90 miles in 77 minutes. In the same year, the same engineer, with D 16 a engine 1395, inaugurated (between Jersey City and Philadelphia) the 18-hour train to Chicago—the "Pennsylvania Special" now the "Broadway."

In 1896 several of these engines were built with 68" driving wheels (class D 16) for mountain helper service.

As stated heretofore, these engines were designed and first built as "class P design of 1895." In 1896, the classification was changed to "L," taking the symbol of a suburban type engine of which but one was built, and was obsolete by this time. However, there were now eleven classes and sub-classes of P engines, and the old system was cumbersome. In 1897 a new classification (and the present one) was adopted, and these 1895 "P" engines became D 16 a. This new system has been used throughout this write-up.

In 1899 and 1900, minor alterations were made in the boiler, thereby producing classes D 16 b, D 16 c, and D 16 d.

The total engines built of these several sub-classes were:

Class D 16— with 68" drivers,	1896	— 5
D 16 a with 80" drivers,	1895- 8	— 74
D 16 b with 68" drivers,	1900- 8	—292
D 16 c with 80" drivers,	1899	— 12
D 16 d with 80" drivers,	1900-10	— 46
Grand Total		429

In later years, all the engines having 80" drivers had them reduced to 68", thus becoming classes D 16 and D 16 b. Engine 5005 was the last to retain the 80" drivers.

Of these various classes—D 11 to D 16 d inclusive—but three, now classed as D 16 sb, are left, viz: Nos. 1035, 1223 and 5079 (built respectively 1905, 1905, and 1900). Engine 1223 was, in 1937, restored to nearly her original condition and used for exhibition purposes.

The first built of these six main classes are illustrated herewith, drawn to the same scale and angle of perspective, so that the growth in size can be readily observed.

The Railroad in Current Literature

By Frank P. Donovan, Jr.

Several months ago when thumbing my way through Bartlett's *Familiar Quotations* I was amazed at the numerous references to railroading. Not only has the Iron Horse a definite place in the American Scene but it apparently has a permanent niche in literature. Yes, in poetry, in prose and in song the new Bartlett contains many old rail favorites with not a few modern quotations anent railroads and railroaders. They range all the way from *Casey Jones* to Willa Cather's significant phrase "how smoothly the trains run beyond the Missouri"; from Strickland Gillilan's sectionman's classic *Finnigin to Flannigan* and John Saxe's poem on the amenities of train travel ("Bless me! this is pleasant, Riding on the Rail") to Kilmer's *The Twelve-Forty-Five* and Millay's wistful lines ". . . there isn't a train I wouldn't take, no matter where it's going."

The editors of this fascinating volume have wisely included that once popular engine man-author Cy Warman, best known for his selection *Will the Lights Be White?"* Warman's long list of short stories was top-drawer railroadiana shortly after the turn of the century and it is gratifying to know he has not been forgotten. Then there is Don Marquis' little known verse on the Skipper:

> For I want to hire out as the Skipper
> (Who dodges life's stress and its strains)
> Of the Trolley, the Toonerville Trolley,
> The Trolley that Meets all the Trains.

Continuing, one might mention Stephen Spender's polished stanzas on *The Express;* Bret Harte's full-flavored spirit of the West as exemplified in *What the Engines Said;* and Edwin Phelps' ordeal at *Essex Junction* "waiting for that delusive train that, always coming, never comes." But probably the poem with the best railroad atmosphere, and certainly the finest lines on railroading ever written by a woman, is Phoebe Hoffman's *The Freight Yards:*

> In the long spring evening's twilight,
> when the sun is setting low,
> And the smoke from all the engines
> flushes up, a rosy glow,
> Then I come up to the bridge-head,
> watch the lights and net-work rails,
> Think of when I rode the freighters—
> engines spouting steam like whales,
> *D. L. W., Jersey Central,* old *Rock Island,*
> *Pere Marquette,*
> *Reading* coal cars down from Scranton,
> piled with anthracite like jet.

N. and W., the *Great Northern, Lehigh Valley,*
B. and O.
Like a giant earth-worm twisting,
slowly 'round the curve they flow.
Caravans of freight move westward,
bearing eastern goods away—
To come back with hogs and cattle,
bales of sweet Kentucky hay.
Brakemen walk along the roof-tops,
lingering for a moment's chat:
There an engineer, while smoking, long and
eloquently spat.
L. and N., D. L. and W., Erie, Reading,
P. R. R.
Riding on your sliding roof-tops, that's
where joy and freedom are.

Finally we learn from Bartlett that a railroad executive is credited with the saying "it's a long time between drinks." It was John Motley Morehead, a Tar Heel governor some two decades before the Civil War and later president of the state-owned Atlantic & North Carolina Railroad, who made the oft-quoted remark after a heated discussion with Gov. James H. Hammond of South Carolina. In short, Christopher Morley and Louella D. Everett, editors of the 11th edition of *Familiar Quotations,* have done an excellent job selecting choice and unusual rail items in American literature.

Now turning to fiction we find very few current all-railroad novels. There is, however, in George Ogden's autobiographical story *There Were No Heroes* a good description of the "jerrys" or trackmen on the Santa Fe in eastern Kansas. Being an ex-section hand himself Ogden accurately depicts the life of the old time gandy dancer as one of long hours, hard work and little if any romance. There is, too, Sue MacVeigh's *Streamlined Murder,* a mystery story filled with thrills and chills as a streamliner clicks off the miles on its maiden trip from New York to Chicago. Incidentally, MacVeigh, the wife of an engineer, specializes in railroad settings for all of her "whodunit" themes. Another recent novel, written primarily for juvenile readers, is Marian McDonough's *The Rails Push West* depicting the construction of a transcontinental line.

In the field of current verse that well-known artist, Grant Reynard, vividly recounts his impression of caboose travel on a celery train from Los Angeles to Grand Island, Nebraska. Titled *Rattling Home for Christmas* his little book catches the rhythm of a time freight speeding across half a continent, and in a style having a touch of Whitman, a smattering of Thomas Wolfe and a good deal of Grant Reynard. The work contains appropriate illustrations by the author.

Closely akin to poetry is song—a subject occupying an increasingly important role in literature because it interprets our social and industrial tempo in a human, life-like way. We find, for example, in

Olin Downes and Elie Siegmeister's *A Treasury of American Song* the story of the United States written in musical scores. And because the Iron Horse occupies such a dominant role in our national growth there is, of course, a section on Railroad Songs. From *John Henry* who "... died with his hammah in his han'," to the *Wreck of the Old 97* is a dramatic story of American railroading.

Another anthology showing the railway's place in regional and work tunes is *Our Singing Country*, compiled by John and Alan Lomax. We can almost see a big buck Negro moving his lining bar and heaving, on the italicized words of the following chant:

> Sis *Joe*, on the *M. and O.*,
> Track *heavy*, but she *will* go.
>
> Take a *mule*, take a *jack*,
> Take a *linin'* bar for to *line* this track.

Or it may be an aged villager singing one of the train-that-never-returned themes, as the wreck on the "old, old Somerset Road":

> Sad farewell when we heard the signal
> And the brakeman dropped the pin,
> And for hours and hours, well, that brakeman waited
> For a train that never will pull in.

These are typical selections from the Lomaxes' new book containing rare and out-of-the-ordinary tunes on railroading. The publication may be regarded as a second volume to their earlier *American Ballads and Folk Songs*.

In this day when inter-American solidarity is so vital to the Western Hemisphere it is a happy coincidence that Rudyard Kipling's impressions of his first visit to South America have recently been published. Calling his work *Brazilian Sketches*, the author gives us some colorful notes on travel of which his description of the Santos and Sao Paulo railway is probably the most striking. Here is the Kipling of old—a passion for detail, a love for the machine, and a truly uncanny ability to put the fascination of railroad operation on the printed page.

An entirely different type of literature with something of a travel background is Albert Bein's three-act play entitled *Heavenly Express*. Featuring the Overland Kid, "du greatest o' 'boes," with a cast of fellow hoboes, trainmen and enginemen, the production has an admirable railroad background. Too, the judicious use of tramp songs as the *Big Rock Candy Mountain* and the *Gila Monster Route* greatly accentuates the railway atmosphere. Although many plays have their locales in a station or train here is one of the very few works which are directly concerned with rail operation.

Concluding, a word or two may be said of Edward Hungerford's *From Covered Wagon to Streamliner* giving a sweeping panorama in text and pictures of the Iron Horse. It is not the purpose of this review to discuss books other than of a general literary nature but here is something between essay and history, informative yet never technical

or studiously didactic. In it we have the railroad represented by painting, (Edwin Lamson Henry's *The 9:45 A. M. Accommodation* makes an admirable frontispiece) lithography, photography; by broadsides and bank notes; and by caricature and wood engraving. Each illustration emphasizes a significant phase of railroading, each caption rounds out and blends the individual pictures into one integrated whole. It is an entertaining and pleasantly informal story, a volume to be read as one reclines, pipe in mouth, in an easy chair by an open fireplace.

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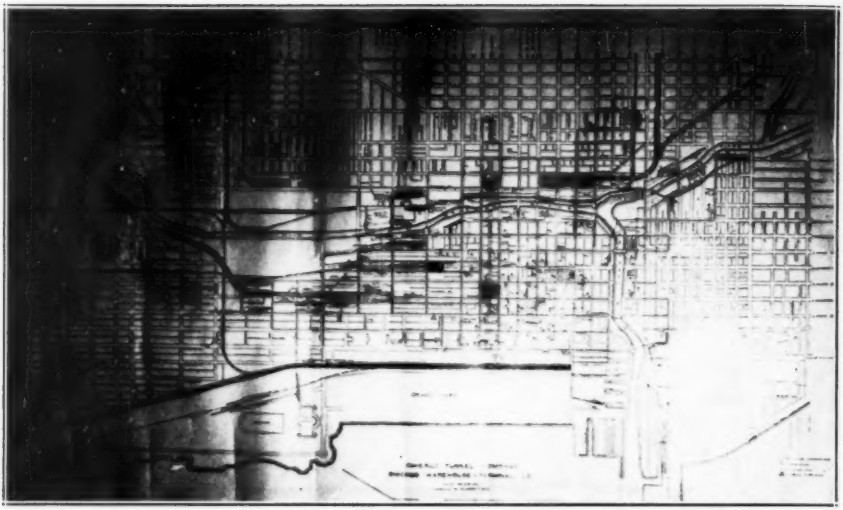
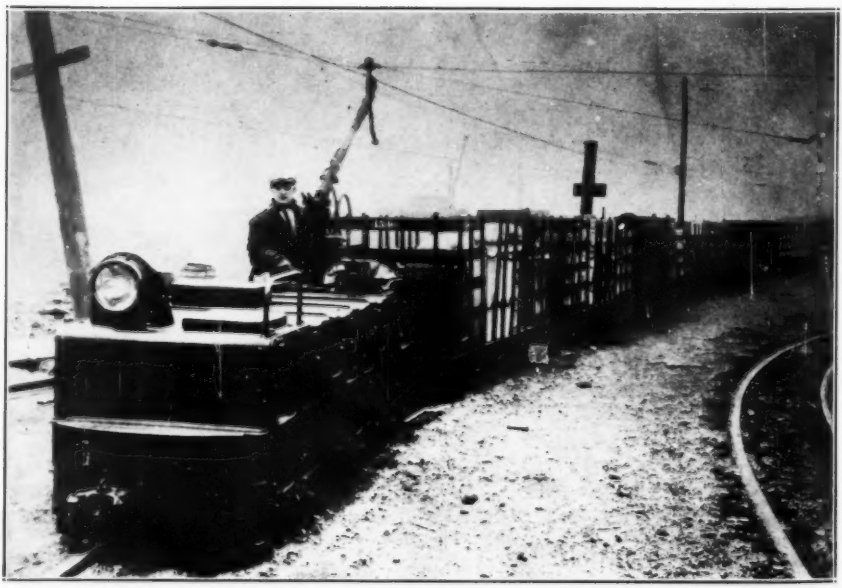


Map of the Company Tracks.



A Freight Train on One of the Few Ground Level Tracks.

The Chicago Tunnel Company

By H. T. Crittenden

The Chicago Tunnel Company owns what is most probably the most unique railroad in the world, a 24-inch gauge railroad every inch of which is laid in tunnels forty feet below busy streets of the "loop" district of Chicago. The tunnels are below the sewers, below the maze of pipes, wires, cables, and conduits, and at the time of construction, supposedly below the level of any subway that might be built. They are unheard as well as unseen. Unlike most subways they emerge nowhere. They are reached only by elevators and they end against blank walls of concrete. They are apparently known to few beyond the ranks of those whom they serve.

The construction of "the tunnels" was begun in 1901 under a franchise granted by the City of Chicago to the Illinois Telephone & Telegraph Company, dated February 20, 1899, and to continue for thirty years. The plan was that they should carry telephone and telegraph wires and cables. There was no intention whatever of transporting merchandise through them. Actual construction was begun at the intersection of Madison and Franklin Streets.

By 1903 about twenty miles of tunnel had been constructed but both funds and credit had been exhausted. The construction of the tunnels proved to be a much more costly proposition than was anticipated. As soon as construction stopped the creditors took over the property and offered it for sale.

On October 29, 1903 the Illinois Tunnel Company was incorporated for the purpose of taking over the abandoned project, completing it and using the tunnels for the transportation of merchandise as well as sound. An amended ordinance was passed July 20, 1903 by the terms of which the proposed company was empowered to "furnish, transmit, convey and deliver sounds, signals and intelligence, packages, mail matter and general merchandise, power, heat, and light by steam, water, air, electricity or otherwise, and to acquire, construct, dispose of, hold, maintain, operate and lease to, or rent from others, all tunnels, instruments and appliances and all property, real or personal, useful in carrying out such project." This new organization had an authorized capital stock of $30,000,000 of which the entire amount was issued. The bonded indebtedness amounted to $15,000,000, consisting of gold certificates of a $1,000 denomination and drawing interest at 5%. The issue was dated December 1, 1903 and was due on December 1, 1928 but subject to call at 105 and interest on any coupon date. Interest was due on June and December 1.

The officials were Albert G. Wheeler, president; Clarence D. Simpson, vice-president; James C. Law, treasurer; Edwin W. Gearhart, secretary. The directors were C. D. Simpson, J. B. Russell, Charles C. Wheeler, Jos. Harris, Albert G. Wheeler, Jr., E. W. Gearhart, and Albert G. Wheeler.

At that time the company contemplated the handling of packages only between stores, warehouses and delivery points. It had about twenty miles of tunnels under public streets but there were no connections with buildings along the way and the promoters were unable to raise the funds necessary for further construction. In 1904 they were joined by all of the original stockholders in a sale of their stock to the Chicago Subway Company which, from that time on, advanced the money to carry on the work. This was performed under air pressure, the workmen being confined in a closed chamber at the seat of operations. The Chicago Subway Company had been formed by New York and Chicago capitalists and incorporated on November 16, 1904 under the laws of New Jersey. Its authorized capital stock was $50,000,000. The corporation was organized solely as a holding company to take over control of the tunnel company.

Gradually the plans were broadened until it was agreed the tunnels were to be made the means of moving merchandise underground between all the railroad terminals and the various stations and buildings. No time was lost and the work was pushed forward as rapidly as possible. The generous use of money furnished by the new interests made possible the completion of the present system of tunnels and the connections with railroads, buildings, commercial houses, public stations, etc. No expense was too great to make the undertaking a success.

As a safeguard against a total collapse of the scheme if anything went wrong, it was decided to divide the construction between two companies. On November 30, 1904 the Chicago Warehouse & Terminal Company was organized to build the necessary connections from the tunnels to railroad freight houses, shipper's premises, and company freight stations, and to construct the necessary terminal facilities such as elevators, shafts, track, etc. The Chicago Tunnel Company had as its part of the work the continuation of construction of the main line tunnels.

In 1909 the work of construction by the two companies was completed. Rolling stock and equipment was procured and operations began substantially as they are carried on today. The company originally proposed to equip their road with one hundred cog-wheel electric locomotives and three thousand steel cars capable of hauling seven tons of coal or twenty-five barrels of sugar or flour but these plans were modified to the extent of using standard adhesion type locomotives. It was found that the steepest grade throughout the tunnels was 3.5% at the points where the tunnels dipped under the river. These engines were built by Baldwin with the General Electric Company furnishing the motors and controllers. The cars were built by the Bettendorf Company of Bettendorf, Iowa, and by the K. & J. Co. By the time trains were running it was found that thirty million dollars had been expended. This amount also covered a telephone system serving the business district of the city. The system consisted of an exchange with an automatic switchboard and ten thousand 'phones.

Soon after operations began, it developed that the volume of business offered and the revenue received were negligible in comparison with

the amount required to pay the interest on the outstanding debt. The new owners had been advancing money for interest payments during the four years of construction work and, when it became plain that the revenue would be insufficient to meet the demands, a receivership was inevitable. Receivers were appointed on December 1, 1910.

On May 1, 1912, the properties and franchises of the Illinois Tunnel Company were purchased by the reorganization committee, representing the old owners, and a new company, the Chicago Tunnel Company, was incorporated on March 27, 1912 to take title to the property. The properties of the Chicago Warehouse & Terminal Co. were restored to it and the two companies continued operating as before the sale. The close connection of the two companies caused the two properties to be operated almost as one for the division is not apparent to those using the tunnels. The C. W. & T. at that time, and still does, owned about ten miles of track which was used when necessary by the C. T. Co. The C. W. & T. owns no equipment.

At the time the property was returned to the C. W. & T. it owned three public terminals known as Universal Freight Stations. At a later date a fourth was built.

To unify the tunnel company and the terminal company the Chicago Tunnel Terminal Corp. was incorporated on June 7, 1923. So far as the general public was concerned, the Chicago Warehouse & Terminal Co. and the Chicago Tunnel Co. dropped out of the picture for the new corporation acted for them in all matters concerning the transportation business. Legally the two companies continued independent operation. This condition continued to exist until September 1925 when the C. T. T. gained physical control of both companies by acquiring their capital stock and mortgage notes. Under C. T. T. ownership the two companies continued to operate as independent corporations.

The automatic telephone system had been continuously operated at a considerable loss. When the receivers were in possession of the property they built a new telephone plant in an attempt to better financial conditions by modernization of the equipment. The operation of this was also unsuccessful. All the telephone property was sold in 1917 by permission of the City Council of Chicago.

The tax rate fixed in the original tunnel franchise called for the payment of 5% of the gross receipts of the company during the first ten years, eight per cent during the next ten years, and twelve percent thereafter. These high percentages were in sharp contrast with the tax rates paid by other public utilities in Chicago which averaged three per cent. They added materially to the expenses of the tunnel company and consequently to the rates required by the company from its patrons. In addition, the Chicago Tunnel Company paid real estate taxes as did the Chicago Warehouse & Terminal Company.

In point of extent and equipment the tunnel system has expanded very little since 1909. There are approximately 62 miles of tunnels and connections, all equipped with track and trolley wire. In the Universal Freight Stations, most of the railroad terminals and larger commercial houses electric tractors are used to shift the cars around. This is done to eliminate the danger of the low trolley wire.

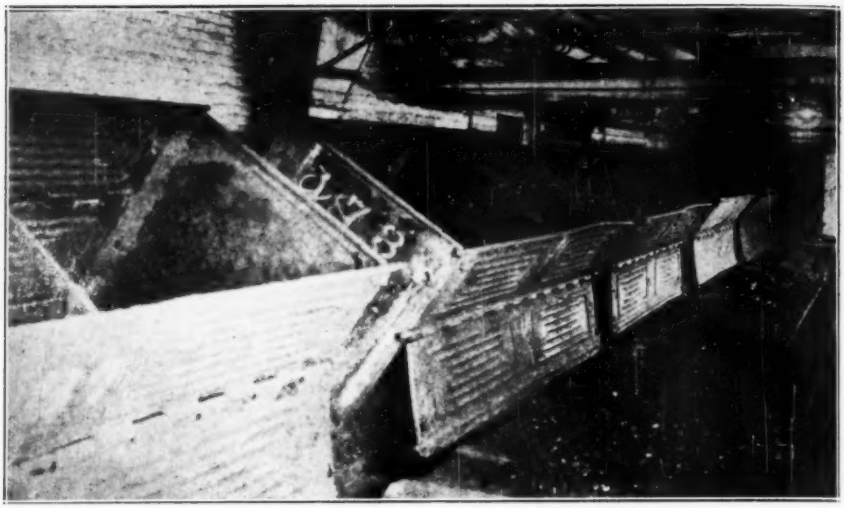
As an engineering project the tunnels measure up to the highest standard. The tubes are six feet wide inside and seven and a half feet high, shaped like a horseshoe. They are bored through a stratum of blue clay and the walls are faced with reinforced concrete a foot thick. There has been no perceptible settling and the foundations of the buildings adjacent to the tunnels have remained unaffected. The entire system is laid with 56-pound rails. Both wood and steel crossties are used, imbedded in the concrete floor.

It would be natural to expect that these long, dim corridors would be damp and thick with heavy air. As a matter of fact they are dry, cool, and airy. The ventilation is sometimes too good. Currents of air, rushing for the shafts, are stirred by the trains and blow with chilling vigor from the river drifts. The temperature is practically constant at 55 degrees, winter and summer. Many large office buildings, commercial houses and theaters take advantage of this condition by drawing air from the tunnels for cooling during the summer and ventilation during the winter.

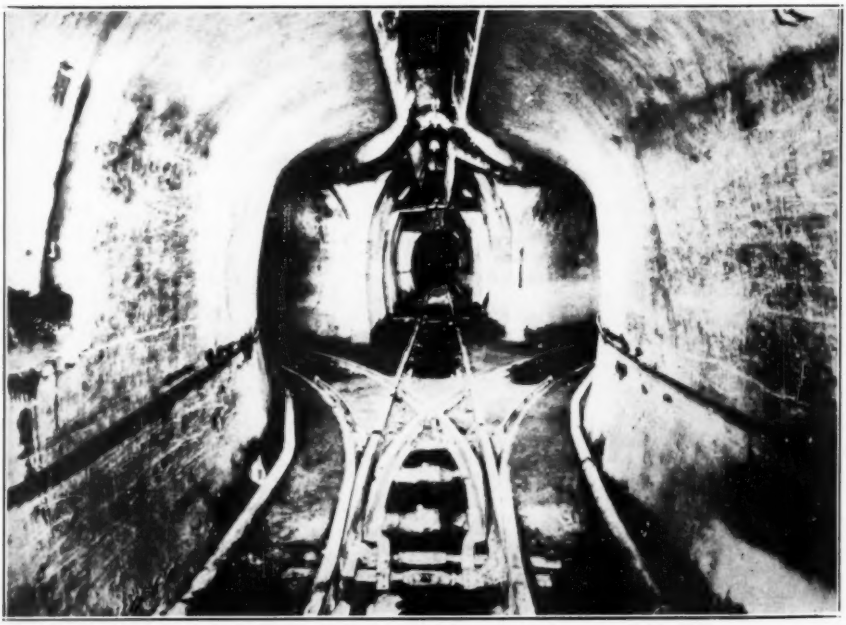
As a provision against dampness there are sixty-three electric pumps and a complete system of pipes and eleven hundred sumps from which any accumulations of water are raised to the sewers above. There is very little seepage. The tunnel floors are dry and clean. Water-proof and fireproof doors are provided to isolate connections with buildings and commercial terminals in case of fire or water from above.

The noise made by moving trains is all that breaks the silence in the tunnels for the locomotives are equipped with no sound signalling device other than a gong and that is seldom used. The tunnels are a railroad in their organization and everything in their operation suggests order and system. The designation of lines as "one way streets" gives some liberty in the operating of trains, but the motorman of each train will probably tell you what another train, passing an intersection, is loaded with, where it is from and where it is going. The loading of coal and refuse material is mechanical and one man can load a train. Of the source of the material nothing is observable except the end of the chute. Cars delivered to their destinations pass on to higher levels and trains are made up of cars that descend on elevators from shipping rooms above. There are no interferences, no crossing gates, no other kinds of traffic, no congestion, no delays.

The tunnels are lighted at all connections and elsewhere when other than the train lights are needed. Signal lights protect the trainmen when delivering or switching cars. Glass reflectors at all intersections give warning of an approaching train from lateral lines. Electric lighted signs announce "curve ahead," and warn to "go slow" or "come to full stop." Each "river drift" is protected by an automatic block signal. The motormen are thoroughly familiar with right-of-way rules and the tunnels are all "one way streets." Signs at the corners show what streets one is under but it is of little consequence. The trainmen know the corners and it doesn't seem to matter that each one is exactly like all the others.



Coal Cars on a Tipped Track Used for Ease of Unloading.



Looking Down "The Main Line."

Nothing has been spared to make operation safe as well as efficient. A train dispatcher in the central station controls all train movements. He has over 300 telephone connections with the tunnels and keeps a dispatcher's regular sheet of train locations and movements.

In 1928 the rolling stock of the tunnels was comprised of 150 electric trolley locomotives, 2,693 merchandise cars, 151 coal cars, 400 excavation and cinder cars, and 60 cars for company use. The usual merchandise car is open and fitted with stakes and bands to protect the load. A car is about four feet wide and twelve feet long and will carry from one to six tons, depending upon the commodity. The coal cars hold four tons and those used for the disposal of excavated material and cinders hold three and a half yards. The engines are what would be called of the 0-4-0 type. All the cars are double truck. All the equipment is fitted with automatic couplers so mounted as to swing in a 90-degree arc, a condition made necessary by the sharp curves. None of the cars are fitted with brakes, all necessary braking being done by the engine. The maximum amount of trackage in operation at one time was 61.96 which included all the track owned by both the tunnel company and the terminal company.

Power is supplied the eleven sections of the system through four substations at 250 volts, direct current. This voltage also takes care of the 3,800 installed lights.

It appears that a tunnel car carries about as much of a load as a motor truck. In the tunnels there is an average of about 300 train movements a day and a train is from ten to fifteen cars. The movement of freight in the tunnel is about equal to 5,000 motor truck movements on the streets. Coupled together the trains that pass through the tunnels daily would extend over ten miles. Motor trucks, carrying the same amount of freight, if allowance is made for spacing between them, would stretch along the highways in a continuous line for something more than three times that distance.

Of the larger commercial houses using the tunnel service twenty-four have direct, individual connections with the tunnels through the facilities provided by the Chicago Warehouse & Terminal Company. These connections consist of tunnel approaches, switches, tracks, shafts and elevators for lifting cars to the level of the street floors. With one exception these are used only for the shipping and receiving of freight transported through the tunnels to and from railroad freight terminals. The elevators have a capacity of one or two cars with their loads.

The four public receiving depots, known as Universal Freight Stations, are outside the loop, but each of them is strategically located for business from that district. Station No. 1 is at 746 West Jackson Boulevard, where the general offices of the company are located, No. 2 is at Erie and Kingsbury Streets, No. 3 is at Seneca and North Water Streets, and No. 4 is at Canal Street and Roosevelt Road. These stations are for the use of shippers who have no private connections with the tunnel right-of-way. At their doors freight is received for shipment over all railroads and the entire job of shipping is completed there. The Tunnel

Company is a common carrier, subject to the supervision of the Interstate Commerce Commission and issues through bills of lading.

Coal delivery and cinder removal form a considerable part of the tunnel company's business. The Field Museum, for instance, had this service and, oddly enough, the museum is built on ground which was made from cinders and excavated material hauled through the tunnels to the disposal station on the lake front.

The shaft and elevator of that old disposal station are housed in a small building west of the stadium, whence the tunnel company's tracks ran south to a point near Thirty-first Street. Over a hundred acres for the new park along the lake front were filled in with material brought through the tunnels, with no cost whatever to the city. There is no doubt what-so-ever as to the importance of this underground railroad to the City of Chicago.

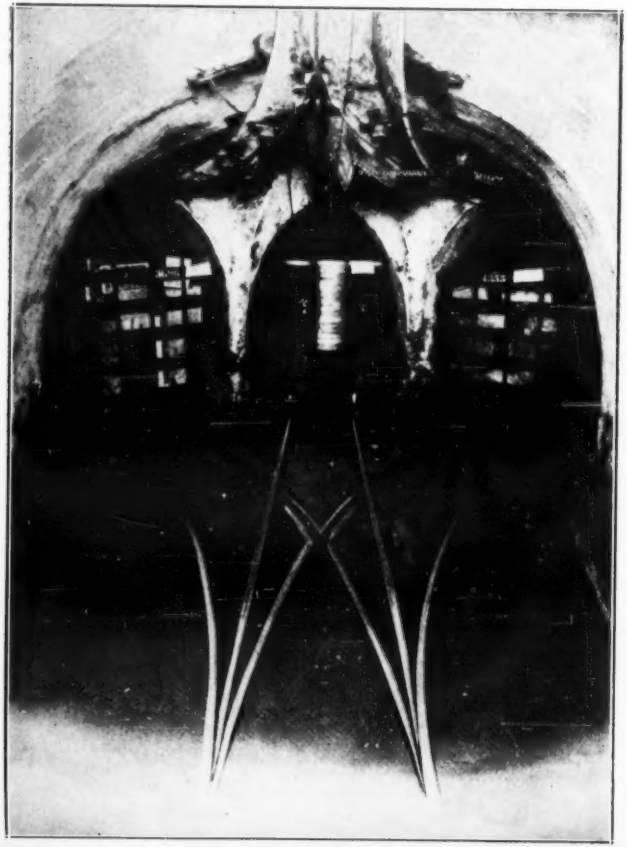
The company's new disposal station is at Grand Avenue and the north branch of the Chicago River. Cinders and clay are now loaded on barges and towed thirteen miles out in the lake for dumping. The tunnels offer a method of disposing of cinders, ashes, and excavated and similar material that has no drawbacks. Clay and mud from excavations and cinders from furnaces drop through chutes into tunnel cars. The daily average tunnel haul from new building excavation and furnaces is between 200 and 300 cars. It varies with the amount of building in the central business district and with the seasons. Sometimes the disposal of clay will be 400 cars a day for several months. In 1926 the tunnels carried 74,000 cars of excavated material. This may be reduced to a daily average of about 250 cars and a consequent elimination from the loop of 500 surface movements a day.

On May 16, 1927 the Chicago Tunnel Transport Company was incorporated as an auxiliary of the terminal corporation. Its purpose was to pick up and deliver freight for shippers located at points distant from the Universal Stations and off the tunnel routes. For this service an extra charge was made. The prohibitive cost of extending the tunnels was directly responsible for the organization of the new company.

Nearly thirty-three years ago the tunnels were used for the delivery of mail between post office and railroad stations. It may, perhaps, be so used in the future and to advantage. The tunnels it seems have something specific to offer in saving time and, perhaps, money in the delivery of mail. And, it may be mentioned that through the tunnels run the pneumatic tubes which carry messages and news matter from the offices of the City Press Association to daily newspapers.

The original franchise expired February 19, 1929 and for slightly over three years after that date the company operated on a franchise extension. On July 19, 1932 a new franchise was acquired for a period of thirty years. The company was fortunate in obtaining under the new charter a tax rate of approximately 3% of the gross revenue.

By the end of 1940 the equipment had dropped to 119 locomotives and 2,155 freight cars. The tunnel is at present, December 1941, operated at about 60% of its full capacity, thus leaving plenty of room for any increase in the number of patrons.



Different Types of Freight Cars.

Shifting In The Tunnels.

The officers are S. W. Tracy, president; J. J. Mitchell and J. H. Burke, vice-president and general manager; L. J. Gundlack, secretary and treasurer; J. A. Ryan, asst. secretary and asst. treasurer. The directors are S. W. Tracy, J. H. Burke, J. F. Peterson, J. J. Mitchell, and D. O. Dunbar. The major portion of the stock is owned by the Harriman and Armour estates.

On April 8, 1941 the C. W. & T. underwent a reorganization. From that date on it has been known as the Chicago Tunnel & Terminal Co. This reorganization had no direct effect on either the Chicago Tunnel Company or the Chicago Warehouse & Terminal Company other than a paper transfer of ownership. These two companies continued to operate under their own charters and franchises.

Contrary to the expectations of the original owners the construction of the passenger carrying subway system interfered with operations. In 1941 it was necessary to abandon some of the tunnels on State, Lake, and Dearborn Streets. These were immediately taken over, enlarged and made a part of the subway.

The company maintains its own repair and construction shop where, for the past fifteen years, all the locomotives and cars have been built. The shop adjoins the company's general offices and has been a part of the road's equipment since its beginning. The present locomotives vary in weight from 5,000 to 6,000 pounds, develop about fifty horsepower, and usually operate at about eighteen miles an hour.

It is estimated the amount of l. c. l. freight hauled per day is around 2,500 tons, not including the coal and cinder business. The pick-up and delivery service inaugurated by the various railroads entering Chicago has caused an approximate decrease of 40% in tonnage. In terms of money the road does an annual business of about $1,200,000. The present valuation of the tunnel property is estimated at approximately $30,000,000, the same as its initial cost.

In compiling the data for this article the entire credit is due to Mr. A. A. Neff who made possible a seemingly impossible task. To Mr. J. H. Burke, vice-president of the tunnel company, goes credit for making available illustrations, maps, and data and for co-operating with Mr. Neff to the fullest extent. It is only through the co-operation of the officials of the various railroad companies that this society can accomplish its aim.

An Early Sleeping Car Pioneer

By Chas. E. Fisher

William Henry Paige was born Feb. 14, 1842. Of poor parents, at the age of eight years he commenced working for the Otis Company of Ware, Massachusetts. Despite the fact he had no education he determined to educate himself. He was a natural mathematician and draftsman and he studied everything relating to that subject. On August 1, 1861, he married Laura Ann Tubbs of West Springfield. She had been educated at New York University, could speak both French and German and was indeed talented. Around the dining room table, she taught her children to express themselves correctly, while her husband labored with a correspondence course by mail—Gaskill's Compendium.

Commencing as a workman on the freight cars built by the T. W. Wason Company of Springfield, Massachusetts, by diligence and study he rose to the position of Superintendent and Master Mechanic. A record of some of the patents granted to him are as follows: device for connecting dissimilar hose couplings, 1868; seat back, 1868; railroad car seat, 1870; lamp for railroad cars, 1872; railroad car wheel, 1873 and 1875 and one covering a sleeping car in 1876. At the time of his death he held thirty-seven (37) patents, mostly assigned to the Wason Company but he refused to give them his sleeping car and his car wheel patents.

Mr. Paige worked in connection with Webster Wagner, Sup't. of Sleeping Cars for the New York Central R. R. At least three cars were built under the Paige patents and in them were used his patents for the seat backs, lamps, packing for windows, latch for windows, car wheels and beds made of canvas stretched taut. Mrs. Paige made the sheets and his daughter Zelda, stencilled them. Red blankets, with buff background, with the name "Paige" in red embroidery were used. A description of one of these cars appeared in the Utica "Herald" one morning in August, 1881:

> "A very beautiful sleeping car, owned by the Wagner Sleeping Car Company, made under the patents of W. H. Paige, has been put on the New York Central R. R. The special feature is the arrangement by which the usual great weight at the top of sleeping cars is done away with. The usual heavy berths are substituted by a canvas stretcher. There are twelve sections which accommodate forty-eight persons. Each section has two large, plate-glass windows, furnished with rubber strips to prevent dust and noise. During the day, the apparatus is stored away so ingeniously that no one could tell he was in a sleeping car, if not so informed. Special provision is made to prevent rattling, and the seats for occupancy by day are excellently designed for the comfort of the traveler.
>
> "Not only is the mechanical design of the car superior to its rivals, but the interior is beautifully finished in East Lake designs of solid mahogany and oak The car trucks are provided with Paige wrought metal wheels.
>
> "No particular attention is paid to a safe place for hiding money and valuables from sleeping car thieves. If the wheels are made hollow, possibly the sharks may be kept away from them while the train is in motion, but if it stopped long in Syracuse, the thieves would steal the wheels and all."

Although Mr. Paige turned over to the Wason Company thirty of his patents, when it came to turning over his sleeping car and car wheel patents, he resigned. With the backing of Emerson Gaylord of Chicopee and D. D. Warren of Springfield, he started the Paige Wrought Metal Car Wheel Company of Springfield.

And now troubles multiplied! The Hon. Webster Wagner was killed in one of his own cars in the Spuyten Duyvil wreck on January 13, 1882. Wagner always invested his surplus money in his own cars and at his death he left nothing. It has always been reported that Wagner left Albany to meet Mr. George Pullman to form an eleven and one-half million dollar merger, which included the Paige patents. As the result of Wagner's death, Pullman purchased the Wagner cars and the Paige patents were probably never used.

The car wheel company was sold to three Cleveland promoters, Jules French, Ezra Dodge and a Mr. Silverthorn. Six months after the death of Webster Wagner, Mr. Paige and his family left for Cleveland. The three Cleveland promoters "pumped" Paige of ideas and after they had "drained him dry," they dumped him. Two years later, Nov. 14, 1885, he died, a broken man, his super-active brain burned out!

In the "Cleveland Leader" for Nov. 16, 1885, appeared the following paragraph in his obituary:

> "Mr. Paige was for twenty years the Superintendent and Director of the Wason Manufacturing Company of Brightwood, Mass., where, under his direction, the first sleeping car ever placed upon an American railroad was built. To his ingenuity and skill the traveling public is greatly indebted. He was also the inventor of the Paige Car Wheel, now largely manufactured in this city, and of more appliances appertaining to railroads, tending to increase the safety and comfort of passengers."

Who actually invented the first sleeping car and who deserves the fame and credit for this American invention that helped revolutionize railroad travel?

Many admit that evidence points to one Asa Hapgood as the inventor. He was associated with the Wason and the Wagner Companies but he did not take out any patents. We know his cars were used on the night train from Boston to New York via the Boston & Albany and New York, New Haven & Hartford Railroads and that Asa Hapgood acted in the capacity of Sleeping Car Conductor.

In 1857, T. T. Woodruff, of Alton, Illinois, invented a sleeping car, patented it, made about $200,000.00 from it and subsequently lost the entire amount through various suits for infringement of other patents.

We read also—

> "It is certain and beyond any measure of dispute that Edward VII, as Prince of Wales, and members of his entourage were the first to rest in 'bunks' while traveling at night, and that this pioneer sleeper was designed and built at Brantford, Canada," (in 1860). See our Bulletin No. 51.

People came from far and near to see this car and it is not impossible that George M. Pullman was one of this number. His patent was taken out in 1859. Pullman has never claimed to have invented

the first sleeping car but he was the first to make sleeping cars successful for operation and travel.

The facts relating to the life of William Henry Paige have been taken from the personal papers recently prepared by his daughter—Mrs. Zelda Paige Jenks, his second of seven children, now residing in Worcester, Massachusetts. In gathering these facts for the use of her family and relatives it has been her purpose to pay tribute to her father. His connection with the advancement of passenger travel warrants the inclusion of it in our magazine for our members.

At the time this material was being prepared, it seemed almost a coincidence that through the kindness of our member, Dr. Homer B. Vanderblue of Northwestern University, Chicago, Dr. Cole, Librarian of the Baker Library received photostats of three contracts for the operation of sleeping cars between the Galena & Chicago Union, Illinois Central, Michigan Central, New York Central & Hudson River and Pennsylvania Railroad and the owners of these cars. These early contracts are of genuine interest and we appreciate the kindness of Dr. Vanderblue in forwarding us this material for publication.

Ben. Field and his associates offer and agree to put on the Galena and Chicago Union Railroad between Chicago and Freeport and also on the Illinois Central Railroad between Freeport and Dunleith, Woodruff's sleeping cars and couches on the following terms

1. No charge is to be made to the Railroad Company for the use of the cars, but the Company is to keep them in repair and to repair any damages which they may receive while being used upon the said line and are also to furnish the necessary fuel and lights therein.

2. Mr. Field and associates are to furnish the services of a person for renting the couches, and are to be at the expense of keeping them clean, and also in repairing the inside work, upholstery and bedding.

3. Mr. Field and associates are to regulate the charge for the use of the couches, but such charge is not to be greater than is charged upon any other Road without the assent of the Company, and not greater than is charged at any time for a similar accommodation upon any Railroad leading from Lake Michigan to the Mississippi River.

4. The Company is to have the right to seat any of the regular passengers on the train, in the unoccupied seats or couches of such car, free of charge to the Company or to the passengers, but this is not to be done so as to exclude or prevent the renting of such couches for sleeping.

Regulations upon this subject are to be hereafter agreed upon, which shall embrace a provision, which shall prevent the admission of

such persons to the said car, as which will prevent the renting of the couches, and such as will be required to protect the reputation of the car.

5. Mr. Field and his associates are to put two cars upon the Road on or before the 1st. of July next and to permit the same to be run the same during the continuance of the Patent.

Such additional cars are also to be put on as the future business of the road may require.

6. The running of the Cars may be discontinued during the winter months at the option of Mr. Field and his associates, unless the Company shall require them to be run by guarantying the payment of five dollars per car per passage over the road.

7. The Company shall have the right to purchase the cars and patent right to use them by giving three months notice but such purchase shall not be made until after the expiration of three years from the date of the present contract.

8. If such purchase is made the Company is to pay the estimated value of the cars at the time, and is to agree to pay for the right to use them five dollars for each car for each passage over the road.

9. Mr. Field and associates may employ two persons on each car, who shall be carried free of charge. Such persons are to conduct themselves both toward passengers and others with decorum and propriety and so as to promote the interests of the Company, and no such person shall be employed on the said car at any time, except such person is approved of by the officers of the Company.

10. Mr. Field and associates are to cause the interior of the cars to be kept clean and neat and in good repair, and they are also to introduce into and on such cars any improvements now made or which may hereafter be made or acquired by the patentees or themselves.

11. And the said Field and his associates hereby agree, if they shall not furnish the said cars in the manner agreed upon or within thirty days after the time stipulated, then the said Railroad Company may construct or acquire other cars of a similar construction and use the same upon its road, and the said Company shall be released and discharged from all damages whatever for any violation or improvement of the patent granted by the United States for the construction of the said cars.

Chicago, April 5th, 1858

BEN FIELD *for*
himself and associates

I hereby accept the above proposal and agreement on behalf of the G. & C. U. R. R. Co.

JOHN B. TURNER, *Prest.*

Agreement made the eighth day of May, 1858, between the New York Central Rail Road Company of the first part and Theodore N. Parmelee, George B. Gates, Morgan Gardner and Webster Wagner of the second part. Witnesseth

That the parties of the first part in pursuance of the Authority vested in them by an act of the Legislature of the State of New York, Entitled "An Act in relation to Sleeping Cars" passed April 7th, 1858, and in consideration of the supposed public benefits arising therefrom, agree to and with said parties of the second part, that they will permit and allow the said parties of the second part, their legal representatives and assigns to place one of Woodruff's Patent Sleeping Cars or any other Patent Sleeping Car approved by the party of the first part on each night passenger train run by the said parties of the first part between Albany and Buffalo and as many more of such Sleeping Cars as the business of said parties of the first part shall in their judgment demand, and that the said parties of the first part will run the said car or cars at their own expense and as a part of such trains, but the said cars shall be entirely under their control as to location in the train and in all other respects except as hereinafter provided. The parties of the first part agree to do all ordinary repairs to the trucks and brakes of such car or cars but the same shall in all other respects be repaired and kept in order and condition by the parties of the second part and the parties of the first part are not to be responsible for any damage to any such car or cars by reason of any collision or any other accident or occurrence whatever while on said road except to repair the trucks and brakes as aforesaid if the same can reasonably be repaired. The parties of the second part agree that said sleeping cars so by them to be placed upon the road of the parties of the first part, shall be as well constructed, of as good material, as strong and as well finished as the best passenger Cars the said parties of the first part have on their said road and said parties of the second part further agree to conform to the requirements and specifications which may be furnished them by the parties of the first part in constructing said sleeping cars.

The said parties of the second part agree and do bind themselves and their legal representatives not to charge or collect for the use of said Car or Cars on said road any greater sum than is authorized by said Act of the Legislature above referred to—All invoices so charged or collected shall belong to the parties of the second part.

The said parties of the second part shall at their own expense send one person to be approved of by the parties of the first part, with each of said trains in which shall be one or more of such Sleeping Cars for the purpose of collecting the charge for the use of such car and also for the purpose of keeping the same in order, but no fare shall be charged by the parties of the first part for carrying such person on such train. The parties of the second part agree that the parties of the first part shall not be liable for any injury to either person or property which may happen to any such person so in charge of said Sleeping Cars and that they will indemnify and save harmless the parties of the first part from

any and all claims which may be made against them by any of said persons so in charge of said Sleeping Cars for any injury to either person or property which may be sustained by them or either of them while in charge of said Sleeping Cars, through the negligence of said parties of the first part their Servants or Agents, or otherwise. The permission hereby given by the parties of the first part to place the said Sleeping Cars on their road may at any time be revoked or terminated by them without any right to the parties of the second part or either of them to claim any allowance or indemnity.

In witness whereof said parties have hereunto set their hands, the said party of the first part by Dean Richmond, Livingston Spraker and John H. Chedell who are a Committee appointed for such purpose.

DEAN RICHMOND
JOHN H. CHEDELL
L. SPRAKER
T. N. PARMELEE
G. B. GATES
MORGAN GARDNER
WEBSTER WAGNER

Memorandum of an Agreement made this 12th day of May A. D. 1858 between J. D. Morton of first part and the Michigan Central Railroad Company of the second part, each with the other for the considerations hereinafter expressed.

Whereas, said party of the first part, by an instrument a copy of which is hereunto annexed, has purchased of T. T. Woodruff & Co. with right to use upon the road of the party of the second part a certain patented arrangement for sleeping in Railway Cars; and whereas, the party of the second part are desirous of obtaining the right to use such now therefore it is agreed between the car-trading parties as follows, to wit:

Said party of the first part hereby agrees to permit the party of the second part to fit up and put in use Cars upon their road according to the said patent to the number and amount of all the Cars they shall wish to have used as Sleeping Cars upon their road for the term of two years from the first day of September next.

Said party of the second part hereby agrees to fit up and have upon their trains as many of these Sleeping Cars as the wants of their passengers shall reasonably require—

Said party of the second part further agrees that in case any improvements are made by its own agents in the mode of arranging the seats or Sleeping accommodations of said patented Car, or should any new device of its own agents, be adopted by said party of second part, said new arrangement or device shall not interfere in any way with this agreement, but shall be assigned over, and by this instrument is hereby assigned over, to the party of the first part having the terms of this contract as one of the considerations for the use of the said patent of T. T. Woodruff & Co.

Said party of the first part hereby agrees to take the entire charge of the business attending the Sleeping facilities of said Cars, furnishing for each train that shall have one or more Cars with Sleeping Couches upon it not less than two men to attend to the wants of the passengers therein, and to collect of passengers for occupying said Cars not less than fifty cents each—and the party of the first part further agrees to keep full and accurate accounts of the security and expenses of said Cars, subject at all times to the inspection of the party of the second part through its proper officers—

Said party of the first part hereby agrees to pay over to the party of the second part monthly *twenty per cent* of the *net* profits which they shall secure, such profits to be ascertained by deducting the expenses incurred in the care of the business of said Cars (for which no salaries beyond what is paid to the men actually employed upon said Cars) from the gross receipts from the passengers for the privilege of sleeping in said Cars, which it is agreed shall be not less than fifty or more than twenty-five cents each.

It is further agreed by the party of the first part that at the Expiration of this Agreement day on 31st day of August A. D. 1860 the party of the second part shall become the owners of the right of the party of the first part under the annexed contract with Messrs. T. T. Woodruff & Co.

In witness whereof the said parties have hereunto set their hands on the day and year first above written—

J. D. Morton

R. N. Rice
Supt. M. C. R. R.

This Contract is hereby
renewed until Sept. 1, 1862.

R. N. Rice
Supt.

J. D. Morton

T. T. Woodruff, G. R. Dykeman, both of Alton, Illinois, John L. Miller, of Litchfield, Illinois and O. W. Childs, of Syracuse, N. York trading under the firm of T. T. Woodruff & Co., owner of Woodruff's patent for seats and couches for Rail Road cars, for themselves, their associates and assigns, by their duly authorized agent T. T. Woodruff do hereby propose to the Pennsylvania Rail Road Co. to put and run upon their Road between Philadelphia and Pittsburgh, or such other points as said Penna. Rail Road Co. may desire, sleeping cars with said patent seats and couches upon the following terms and conditions to wit

First No charge to be made to the Pennsylvania Rail Road Co. for the use of the cars, but said Company to keep them in proper running order and good condition, including renewal of wheels and axles and to

repair all damages they may sustain (ordinary wear and tear excepted,) exception that Woodruff & Co. shall keep the upholstery and inside of the cars in first class condition and repair at their own expense,—The Pennsylvania Rail Road Co. to furnish fuel and lights—cars to be subject to the approval of the General Car Inspector of the Pennsylvania Rail Road Co. as to safety and equipment.

Second Woodruff & Co. to be entitled to charge and receive from such passengers as shall choose to occupy the couches a reasonable compensation for the same, not exceeding (fifty cents) 50c for each person, or couch occupied which charge shall entitle the party to the seat during the Trip—Further—The charge shall not be greater than the usual price charged upon other roads for similar accommodation, and especially not greater than on competing lines—

Third The Pennsylvania Rail Road Co. to have the right to seat any of the regular first class passengers in any of the seats of the Sleeping Cars not required to be used as couches—but it is only intended by this provision to secure the carrying in the sleeping cars an equal number of Passengers to the average number carried in the other first class Passenger Cars of the train—Regulations shall hereafter be agreed upon as shall give such discretion in the admission of Passengers to the Sleeping cars as will favor the renting of the Couches, and such regulations as may be necessary to preserve the reputation of Sleeping cars by excluding improper persons from using them—

Fourth The Pennsylvania Rail Road Co., to carry free two attendants or persons in charge of each sleeping car on the part of Woodruff & Co. for the purpose of renting the couches and keeping the car in order and also to carry free the person having the general oversight of said business when necessarily passing over said Road in business relating to the running of Sleeping Cars thereon all of which shall be considered as Employees of the Pennsylvania Rail Road Co. while travelling on the Road and said Company shall not be held responsible for personal injuries that may occur—

Fifth Therefore Woodruff & Co. shall put on the Road not less than one car for each night train by the first day of January next and as much earlier as practicable—They shall put on additional cars as the business of the Road shall in the opinion of the Genl. Supt. require—

Sixth Woodruff & Co. shall employ on said Sleeping Cars no persons but such as shall conduct themselves with decorum and propriety, and none but such as shall be approved by the Genl. Supt. of the Company and will be subject to removal at his option—

Seventh All the improvements which the patentee of the said seats and couches has made, or shall hereafter make, and all useful inventions and improvements which shall be made in Sleeping Cars shall be promptly introduced by Woodruff & Co. upon the sleeping cars of this Road so far as the same shall conduce to the safety or comfort of Passengers or tend to increase the Passenger traffic of the road and their compliance with this provision shall give them the exclusive right of running Sleeping cars on said Road during the continuance of said patents, unless this contract should be terminated by notice herein

provided. But if the Pennsylvania Rail Road Co. shall at any time deem it to their interest from the point of sufficient patronage or from any other cause to discontinue the running of Sleeping Cars they may by giving Three Months previous notice acquire such discontinuance but such notice shall not be given until one year after the cars shall commence running—Woodruff & Co. may also on a like notice cease running said Cars.

Eighth The regulations as to the persons to be admitted into the Sleeping Cars, and as to the occupation of seats when not required for sleeping, and all other proper rules and regulations for the government of said Sleeping Cars shall be subject to the approval of the Genl. Supt. of the said Road—and it is expressly understood that all Rules and Regulations of said Pennsylvania Rail Road Co. shall be strictly observed and complied with on the part of said Woodruff & Co. and all persons in their service—

In witness whereof—We the undersigned have hereunto affixed our signatures, for and on behalf of our respective Companies this Fifteenth day of September AD 1858, subject to the approval of the President of the Penna Rail Road Co., and this contract shall not be binding until approved by his signature—

THOMAS A. SCOTT
Genl. Supt. PRRCo.

T. T. WOODRUFF & Co.
By: T. T. WOODRUFF

Approved—

J. EDGAR THOMSON
Pres. Penn. RR Co.

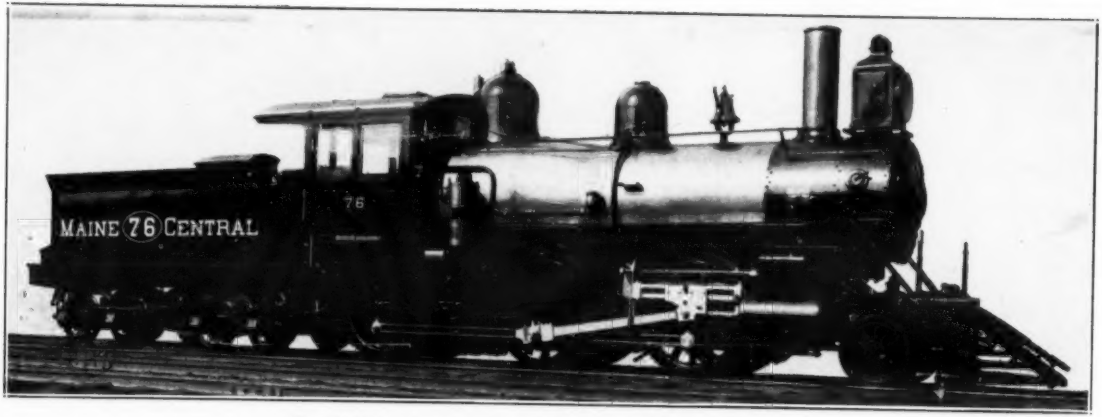
The within Contract is hereby assigned and transferred to Pullmans Palace Car Company as per indenture made the Seventeenth day of February 1870 between the Central Transportation Company and Pullmans Palace Car Company.—

O. W. Childs
Prest.

atten. J. J. Cottinger
Secy.

Box 11 2 No. 2
Penn. Cent. R R Co.
With
T. T. Woodruff & Co.
CONTRACT
Sept. 15 1858
M
O. W. Childs
Prest.
No. 107

Contract Penna R. R. Co.
and
T. T. Woodruff & Co.



Me. C. #76 as built; renumbered #232. Note link and pin coupling.

A Former Rail Center in the White Mountains: North Conway, New Hampshire

By C. F. H. Allen

The White Mountains have always been one of the main scenic attractions of New England, and accommodations for travellers and tourists have been very extensive. Whereas, formerly, long distance travel was entirely by railroad, with people spending their vacations by the week in one locality the trend has changed, with the advent of the automobile and consequent extension of a modern system of roads, to a transient trade. The gasoline tourist sees all (?) the scenery from the highways in a few days, and passes on to a new territory.

The former mode of visiting one or two points of interest each season led to the erection of numerous large hotels, throughout the mountains; for the comfort and convenience of the vacationer. One of the most accessible localities was the village of North Conway, 132 miles from Boston on the Boston and Maine Railroad, and 60 miles from Portland on the Maine Central. The large number of nearby attractions resulted in an influx of summer visitors, and a large number of hotels to accommodate them was inevitable. By 1910 there were five big hotels, The Kearsarge, Eastman House, Sunset House, Randall House and Russell Cottages, and the smaller establishments such as Forest Glen Inn, Centre Villa, Moatview, Moat Mountain House, and Kearsarge Hall. Besides these, many of the villagers took in small parties and individuals. In the settlement at Intervale, two miles north, were the Intervale House, Bellevue Inn and Pendexter Mansion. During the tourist season these were all well-filled, being booked well in advance; incidentally many college students were gainfully employed as help during the summer.

Owing to this concentration of tourist facilities, and the fact that the Conway Branch of the Portland Division of the Boston and Maine terminated at Intervale, North Conway became of importance as a railroad center. Both railroads built elaborate stations with roundhouses, turntables and facilities for coaling, watering and cleaning out ashes, and storage of snow plows. The train crews settled in the village with their families, and during the summer it was a bustling place. Each station had its agent; a telegraph operator and baggage man were assigned as extras during the tourist season. There were four grade crossings of main streets, each protected by flagmen all day.

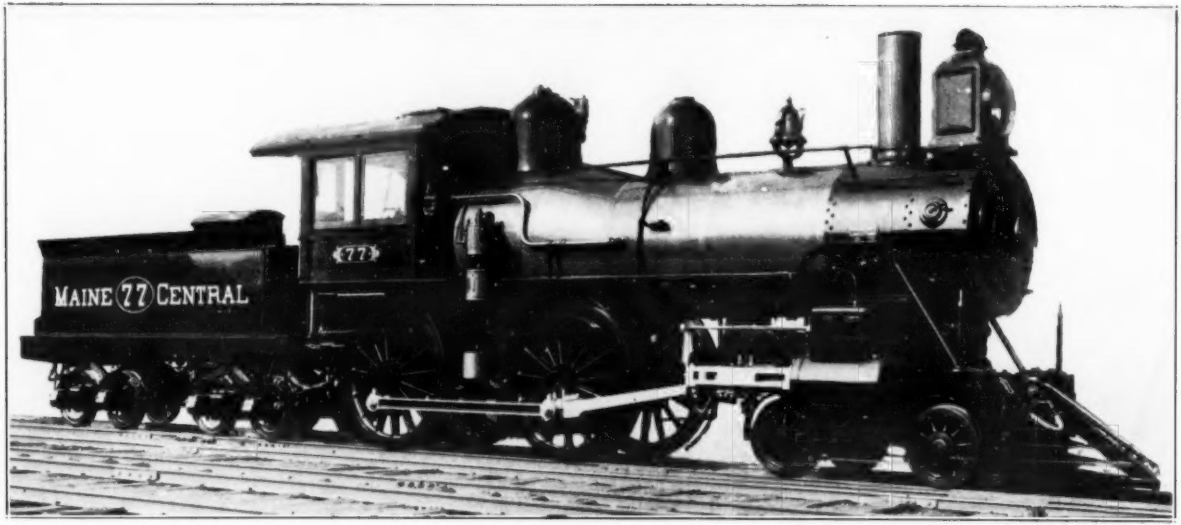
How different the situation after the advent of the automobile! The hotels burned, one by one, and were never replaced. The tourist habits altered, with great increase in the transient trade. Passenger traffic fell off and trucks soon captured most of the local freight business. The railroads dropped train after train down to an irreducible minimum, and the once busy rail center became barely more than a way station.

This was especially true of the Maine Central; the nearby town of Bartlett, at the foot of the grade up through Crawford Notch, was the logical point to service the rolling stock, attach or remove extra cars, and install pusher service, so this was developed. The roundhouse there was enlarged and turntable increased in length to accommodate the longer locomotives. In 1907 the writer recalls how the two locomotives of the midnight freights, which were removed at Bartlett after arrival from Portland, had to come down to North Conway every day to be turned, owing to the small turntable at Bartlett. At the same time they were coaled and watered. These locomotives were the class S tenwheelers that had been recently obtained from Schenectady (No. 351-363) and Rhode Island (No. 364-373).

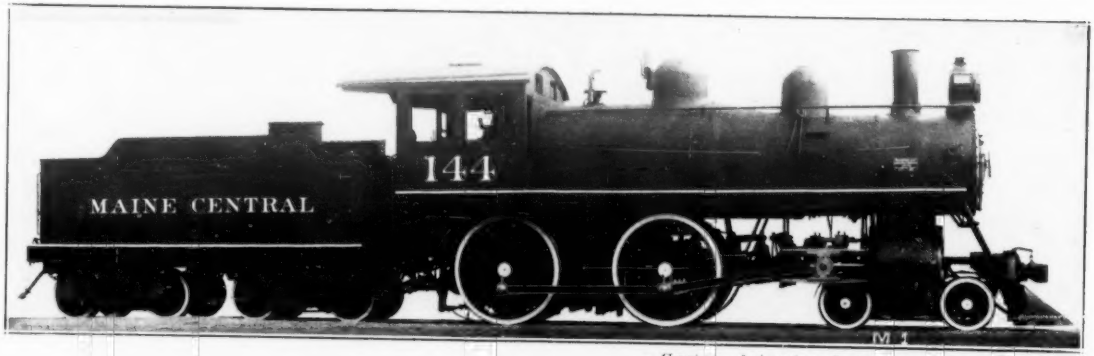
The road had built a 4-stall engine house at North Conway with facilities already mentioned, and including extensive side track. During the memory of the writer, it seldom housed a locomotive but usually held a snow plow; the doors were seldom opened.

For years an early morning train operated from North Conway to Beecher Falls, returning late in the evening; this was for the convenience of tourists and fishermen. A picture showing this train and the station appeared on page 90 of Bulletin No. 56. Many people attended the Fryeburg Fair before the town's big fire in 1906 and special trains were run from Portland; these came up to North Conway for turning. The fire destroyed all the hotels, the Fair was discontinued and the passenger service was no longer needed. With the change to automobiles, the morning train lost its patronage, and the fishermen attained their ends more easily. There was no longer a special need for maintaining these facilities, and they were gradually discontinued.

With larger capacity tenders on the locomotives, the need for frequent refilling of both coal and water became less and many intermediate water tanks were abandoned—an important economy move in the cold climates. The large coaling shed fell into disuse and had been torn down by the early 20's. The engine house was demolished during the 30's—it seems remarkable that it had not succumbed to fire, the usual fate of wooden structures that had outgrown their usefulness in the mountains. The station, with covered platform long enough to accommodate an eleven-car passenger train has shrunk to a mere ticket office. Now it is only operated at train time, by the agent of the Boston and Maine, L. R. Clark, who drives over to perform the service. By 1915 gates had been installed at the three grade crossings and were operated by one man from the middle point. The operator was an Arthur H. Neal, who had started as a brakeman and been injured; his life, until retirement, was spent in and around the shanty, manipulating gates, flags, and lanterns as required. Before the gates were installed, it was one of his duties to light all the switch lamps and a hand-operated semaphore some distance to the east of the station, but, afterwards, this duty devolved upon the section foreman. As a small boy the writer often accompanied Mr. Neal on these rounds in the late winter afternoons.



Me. C. #77 as built; renumbered #193. Note link and pin coupling.



—Courtesy of American Locomotive Company, New York.

Me. C. #144, Manchester 1905.

Although the Conway Branch of the Portland Division of the Boston and Maine extends to Intervale, to join the Maine Central, since there was no village at that point, the effective end of train operation was at North Conway; trains backed up to Intervale before starting for Boston, and down to North Conway after trips northward. The 4-stall engine house is still standing and, in part, in daily use, as is the turntable and various side tracks. Most of the trainmen and section gang continue to be full-time residents of the town, as in the past. The only grade crossing, north of the village, has been protected for years by an automatic lights and wig-wag combination.

The peak of passenger train service on both roads came about 1915-1916. At that time on the summer schedule there were twelve trains per day on the Maine Central and six on the Boston and Maine, with some Sunday trains. During the rest of the year, there were six on the Maine Central and four on the Boston and Maine, with no Sunday service on the former. A glance at some old timetables is interesting.

Considering the Maine Central first, during the non-tourist season we find (north and west bound) No. 154-224, arr. from Portland at 10:58 A. M., No. 158 arr. 3:16 P. M. and No. 168 arr. 7:53 P. M. The first train was the principal one of the day for North Conway, for it brought the morning papers (except those of Sunday which came on the Boston and Maine) and the bulk of the mail. It often carried as many as eleven cars, including Pullmans. Any empty cars were detached at Bartlett, an open observation car added in summer, and the single locomotive replaced by two if the train was of sufficient length. An eleven-car train with two engines on front, working up the grades and around the curves in the Notch was a sight not to be forgotten by those in the observation car. As No. 154 it operated to St. Johnsbury, Vermont, while a portion of it with a new engine, set out as No. 224 from Fabyans, running to Beecher Falls, Vermont, and Lime Ridge, P. Q. The afternoon train, No. 158 ran to Beecher Falls only, while the evening train stopped at Bartlett. In the reverse direction, No. 151, the 6:12 A. M. from Bartlett to Portland was followed by No. 155 from Beecher Falls, arr. 9:38 A. M. and by No. 163-225 from St. Johnsbury and Lime Ridge, arr. 6:11 P. M. The actual times varied but slightly from year to year. These trains had been running for years.

During the tourist season, extra trains were added, including two on Sunday in each direction. Thus, No. 150, mentioned above, operated from North Conway to Beecher Falls, leaving at 7:00 A. M. and returning as No. 165 at 9:32 P. M. No. 154-224 was separated into two trains from Portland, No. 224 making all the stops, and No. 154 running express, except to pick up passengers. In the reverse direction, the first as No. 169, from Fabyans, arr. North Conway about 3:19 P. M. Train No. 158 was operated to Beecher Falls some summers, but to St. Johnsbury others.

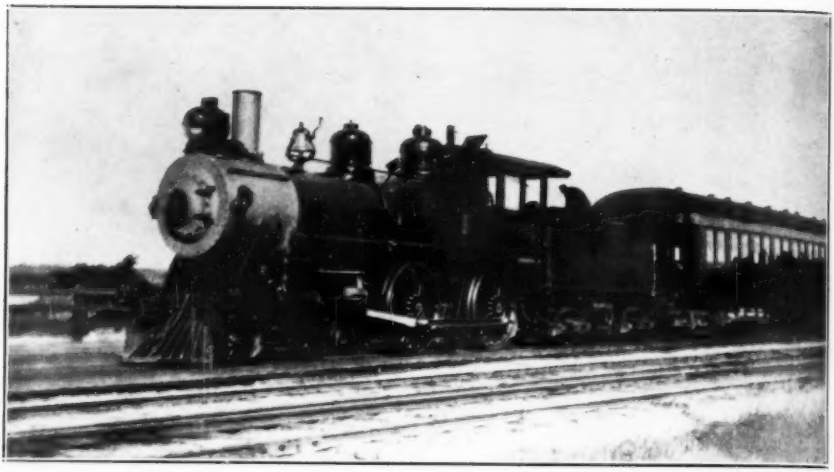
These trains carried through Pullman cars between Portland, Montreal, and Quebec; No. 154 connected with the Boston and Maine at St. Johnsbury, running over this road to Newport, Vt., at which point the

Canadian Pacific took over. The second train, No. 224, connected with the Quebec Central at Dudswell Junction. The trip, from start to finish, took about twelve hours to each of the Canadian cities from Portland. In addition, during the summer, a night train of sleeping cars operated between Portland and Montreal; these passed through North Conway at 11:06 P. M. (No. 164, north bound) and at 4:52 A. M. (No. 151 south bound), with stops to pick up or leave long distance passengers. Through sleeping cars were carried from Kennebunkport to Montreal, via the Boston and Maine to Portland, for the benefit of the large group of Canadians, vacationing on the Maine beaches. These trains were an inspiring sight, for the cars were all from the Canadian Pacific, of wooden construction and natural finish—said to be redwood. The Maine Central kept their locomotives well-wiped and freshly painted, thus making a colorful train. There were two Sunday passenger trains in each direction, a local from Bartlett to Portland (No. 784,785) and a longer run to Fabyans (No. 786,787).

The Boston and Maine operated fewer trains; during the off-season passenger trains left at 7:00 A. M. (No. 2908) and 3:19 P. M. (No. 2918); in the opposite direction they arrived at 1:44 (No. 2907) and 6:17 P. M. (No. 2917). The former was operated only to and from Portsmouth, but the latter through to Boston. During the summer season, the second train carried Pullman cars and operated through to Fabyans. A third fast train was also added in the summer leaving Boston about 9:25 A. M. (No. 2909) arriving at North Conway at 1:59 P. M., and terminating at Beecher Falls; it carried through coaches and a Pullman chair car. In the opposite direction it left Beecher Falls, reaching North Conway at 11:01 A. M. and Boston at 3:30 P. M. (No. 2912). Above Intervale, these ran over the Maine Central as No. 166, 161, 160, and 157 respectively. The trains ran by way of the Eastern Division and Portsmouth to Conway Junction (Jewett) and then to Somersworth; for the past decade they have been routed via Dover to Somersworth, a saving of only seven miles, but allowing about the same length of essentially parallel trackage in Maine to be abandoned.

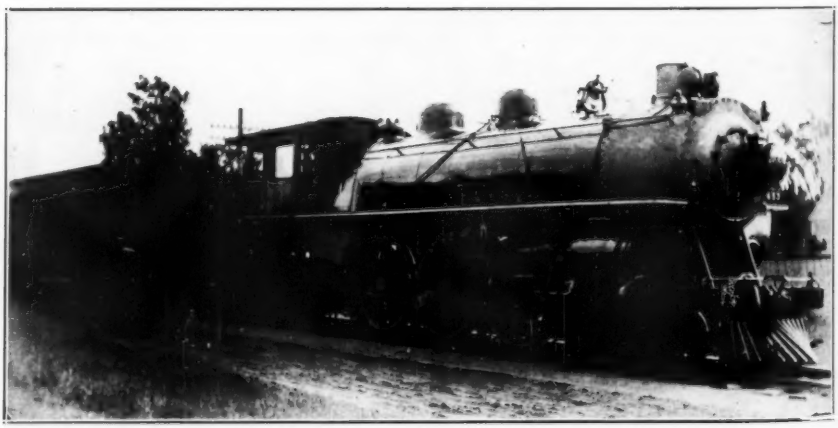
The Boston and Maine still schedules the two trains in each direction throughout the year; the morning Sunday train has been discontinued, but an extra late afternoon train runs north Saturdays only. With the current interest in winter sports, North Conway has regained some of its former popularity and extra "ski or snow trains" appear on weekends when there is sufficient snow.

In view of the light passenger traffic, attempts have been made to replace the steam trains by gas-electric cars. Though successful in the summer, it is said that owing to insufficient weight, they slip too much during the cold winters and have to be replaced by steam. Some success has followed the diversion of the stream-lined Diesel-electric "Flying Yankee" during the summer; repainted and christened the "Mountaineer." It operates on a fast schedule from Boston through North Conway and the White Mountains to Whitefield and Littleton. From Intervale to Whitefield it runs over the Maine Central.



—Courtesy of E. F. Stillings.

Me. C. #194, after change of headlight and with automatic couplers.



Maine Central #453 on Train #158. Note electric arc light and dynamo on top of boiler in front of stack.

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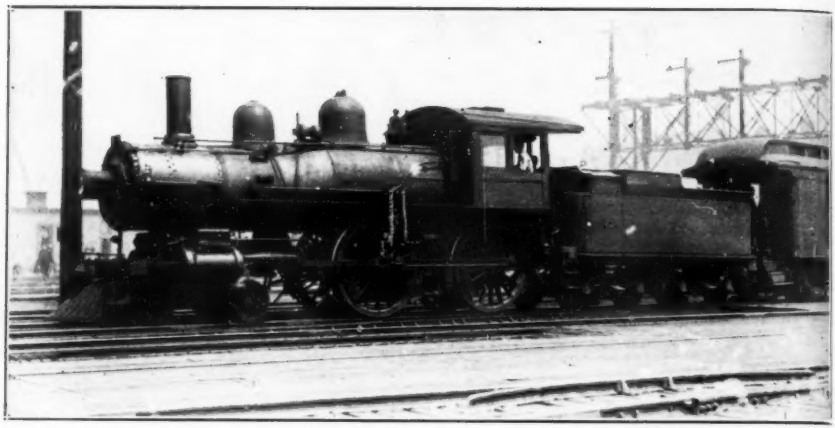
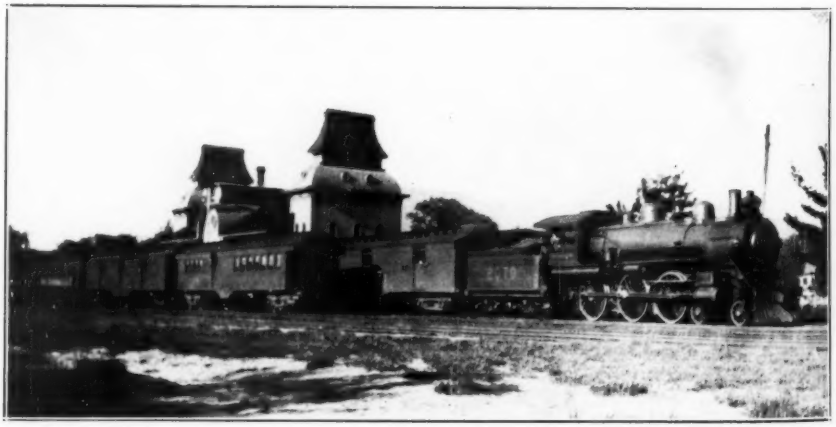


—Courtesy of C. P. Atherton.

B.&M. #949, ex. #971, Manchester, 1900 on morning train, North Conway to Portsmouth.



—Courtesy of H. S. Walker.

"All Aboard for Boston." At Boston & Maine Station, North Conway, N. H. #2070, ex #1055, ex Fitchburg #7,315. Schenectady, 1899.

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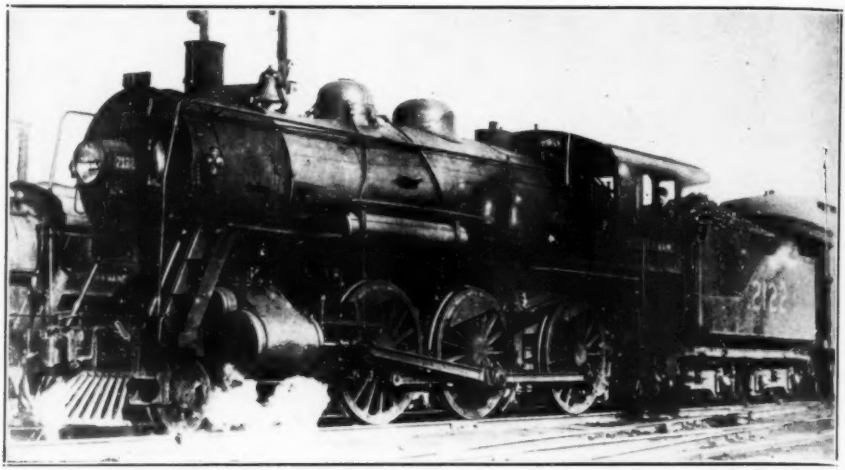
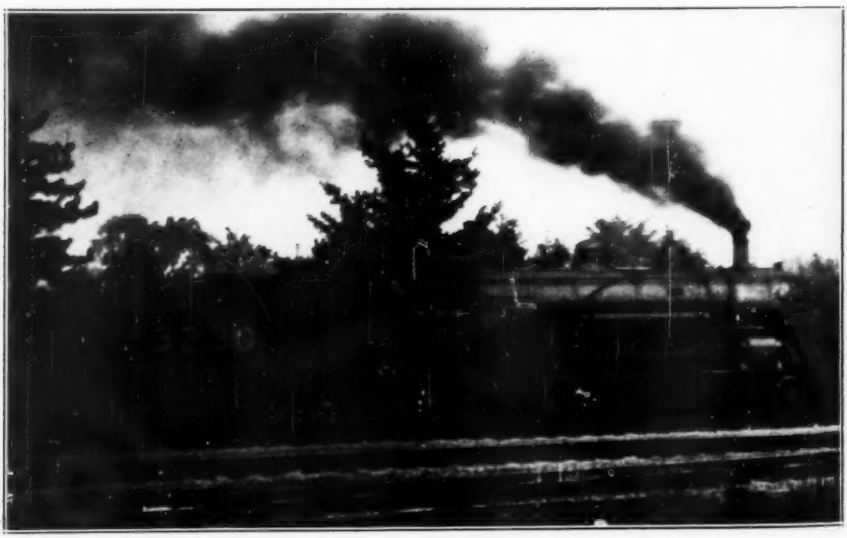


—Courtesy of C. P. Atherton.

One of the Schenectady Ten-wheelers used on the North Conway-Boston service. #2122, ex #22
Built 1906, Class C-21b, 20x26 cyl., 73" drivers.



A Manchester Atlantic. B&M #3230, ex. #843.

For some years the Maine Central has operated but one train each way daily from Portland to St. Johnsbury; it carries one passenger car, the remainder being mail, express and milk cars.

Freight business has dwindled on both roads, especially on local shipments. An extra freight runs up one day and down the next on the Maine Central, whereas it was formerly scheduled daily and regularly. The through night freights still continue, but are greatly reduced in length. They used to meet (and pass) at North Conway about midnight, the one taking the sidings being scattered over the passing track below and above the station with the engine and a few cars on still a third. They now pass at Fryeburg. Nothing better illustrates the decrease in length of these freights; the sidings at North Conway accommodate sixty-eight cars, while the one at Fryeburg has a capacity of only thirty-six. The former trains could not have passed at Fryeburg owing to the limited sidings. The Boston and Maine freight, one daily each way, operated between North Conway and Somersworth or Rochester.

It has been interesting to watch the gradual shift from light to heavy motive power as steel cars replaced wooden ones. Since the locomotive specifications have been given in Mr. Fisher's excellent articles, there is no need to repeat them here. When the writer first observed the Maine Central, all passenger trains were hauled by the 4-4-0 type in the series No. 191-201; No. 194 was in regular service on train No. 154. The freight was taken care of by the small Moguls, 2-6-0 like No. 226. On the acquisition of the 351-363 tenwheelers from Schenectady, and 364-372 series from Rhode Island, these were used, doubleheaded, on the midnight freights, and on passenger service up the Notch grades, being later extended to the daily freights, especially the Baldwin 4-6-0 series, 374-382. The long passenger trains with light cars were hauled by the early tenwheelers, such as No. 275 (275-289 series). By 1915, the heavier passenger rolling stock was hauled by Pacifics, 450-462, the lighter ones being handled by the new 4-4-0's of the 141-152 series. After the war the Government 4-6-0's of the 401-412 series were frequently used on the mid-morning and mid-afternoon trains, or up the Notch, replacing the older engines. The evolution of the tenwheeler is nowhere more clearly followed than on the Maine Central. The author has never seen any of the Lima engines (383-390) on the Mountain Division. The heavy Moguls, 320-321, were sometimes used on local freights.

The midnight freights were hauled by the Mallets, 2-6-6-2, (No. 1201-4), as soon as these were obtained from the Boston and Maine, eventually being replaced by the 601-632 series of Mikados, while the daily way freights were hauled by Consolidations, 501-528 series.

On the Boston and Maine, the light passenger traffic was handled by 4-4-0's, such as 906 and 4-6-0's (2074 series) for the longer trains, being gradually replaced by the Atlantics (3220-3230) or tenwheelers of the 2100-2129 series, for the fast summer traffic and Pacifics (3640-3660) for the heavier, slower trains; light morning trains always had

small engines. The freight was hauled by Manchester Moguls, 2-6-0, at first the 1370-80 series and lately by the 1440-80 group of engines.

Heavy winter snows demanded the operation of plows on both railroads and each kept a plow in storage at North Conway. At first these were small wedge plows, but the development of the large wing plows (Russell type) and more powerful locomotives caused a replacement of these in general service. The contrast in results was marked; with the wings open, the new plows "tossed the snow right over the fence" along the right of way, to quote a local observer.

This brief summary has, we hope, given an idea of how much the railroads formerly contributed to the activities around North Conway. It is to be regretted that the march of time has served to diminish this so greatly, but there is still enough activity to interest the visitor who will take the trouble to explore.

"The Mountaineer" leaving Intervale.

A Noble Experiment: The Junction City-Horton Wooden Railroad

By Randall V. Mills

Reaching west into the Coast Range from Junction City, Oregon, remain the grade, stretches of rail, and gaunt trestles of a railroad, appropriate to a logging country, built entirely of wood. A series of disasters and plain hard luck kept the road from ever operating or being finished, and it remains a ruin and a matter of speculation about what it might have been. The road was the product of the thought and tinkering of Arthur W. Arnold, mechanic and former lumberman, of Portland, Oregon, who devised what he called the Arnold Auto-Rail System in 1923. During that year he displayed an experimental locomotive operating on an oval of track built on a vacant lot near downtown Portland and announced plans for the construction of a seven-mile line reaching into the timber east from Molalla, Oregon.[1] The Molalla line evidently never was built, but a short stretch of the same type of railroad for a short time was operated in King's Valley.[2] The main construction, however, was the eighteen-mile line projected between Junction City and Horton, Oregon.

An engineer who had been consultant for the Oregon Public Service Commission pointed out that three problems faced Arnold when he began to work out his device. First, would rails made of timber last? Second, would rubber tires hold, or slip and refuse to carry a load? Third, would fixed wheels (*i.e.*, without compensating differential gearing) take curves without derailment? The first question would seem to have been answered a century before by the unfortunate experiments of steam railroads, but with rubber-tired wheels and lighter equipment the question could be reconsidered. The second question was answered by scientists at the Oregon Agricultural College who reported that rubber had a 70% coefficient friction on dry wood and 20% on steel; or, in plain language, rubber tires would not slip on grades up to seventy percent. To answer the remaining questions, Arnold built his experimental equipment in Portland.[3] Originally he planned to use solid timbers, six inches square, for rails, but in practice on the Junction City road he first changed to paired four-by-eights, and finally to three two-by-six planks spiked together. The planks were staggered so that the joints did not all come together, and the effect was that of a continuous, if not welded, rail. When the surface wore under traffic, the whole rail could be turned over to expose a new surface, or the worn plank could be removed and a new one substituted. The rails, in turn, were spiked to ties made of two-by-six or four-by-eight planks,

[1] *The Oregonian* (Portland, Oregon), December 23, 1923.
[2] Leonard Lerwill, "Wooden Railroad Now Under Construction . . ." *Four L Bulletin*, Vol. 7 (August, 1925), p. 13.
[3] Junction City (Oregon) *Times*, March 26, 1926.

spaced four feet apart. The resulting track was on earth ballast strong enough to bear the weight of a train but at the same time flexible and —most important—cheap to construct and maintain.[4]

Tests showed that the locomotive when built could take curves of fifty-seven degrees, but on the Junction City line, the curves were no greater than forty-seven degrees. The grade of the Junction City road, too, was kept low, although this required a winding track to climb the grade of the hills.

For the track Arnold constructed a special locomotive, powered by a gasoline engine taken from a motor truck, rolling on four wheels, and having a flexible "oscillating" frame built of wood. On top of the frame was a platform which permitted the locomotive to carry a payload and act as a single unit freight motor; at one side of the deck rose a column which supported a square cab extending at the center of the locomotive over the load. In the cab were the necessary controls, including a selective gear shift permitting seventeen speeds and allowing equal speed in either forward or reverse. No differential was used, and on curves the oscillating frame and rubber tires took up the difference in speed, a device which miraculously worked. Wheels came from a truck and had solid rubber tires six inches wide; a two-inch flange was formed by a disc of iron bolted on the inside of the wheel. When construction of the Junction City line began, Arnold built two flat cars or trailers on the same general plan with similar frames and wheels. Each car was to carry 5000 pounds of load.[5]

With this equipment the road was put into operation, mainly kept busy by transporting construction material, sightseers and potential investors. After three years a second locomotive was constructed, a gas-electric affair powered by a Continental motor and fitted with General Electric equipment. Rated at ten tons, the contraption actually weighed twelve. Four-wheel drive was maintained, but locomotive brakes and sanding equipment were added (indicating a difference between theory and practice in frictional coefficient), and the width of the tires was increased to eight inches. Finally, in 1929 a third locomotive went into service, built at a garage in Junction City and unmistakably a motor truck with variations. In fact, the new locomotive was constructed from an old logging truck and retained the steel frame and automobile cab. Power was transmitted to two four-wheel trucks which were equipped with differentials; the front truck was swiveled to permit sharp turns to be taken without reduction of speed. When the locomotive was finished, the front truck and end was hoisted onto the rear of an ordinary auto-truck and the locomotive proceeded ingloriously to the railroad under its own power, using its hoist only as a steering device.

At the time Arnold first introduced his system, logging could be carried on in the Oregon forests the year round only where the camps were equipped with regular iron railways and steam logging locomotives,

[4] *Lerwill, loc. cit.*
[5] *The Oregonian,* December 23, 1923.

Wreck of Trailer at end of Track in Woods with Wheels Removed. Photo May, 1939.

Third Locomotive of J. C.-H. Road. Note tires and flanges on wheels.

usually geared to negotiate the sharp curves and grades. Such railroads, however, were expensive to construct and maintain, and the small "gyppo" outfits contented themselves with motor trucks which on the soggy forest roads could sometimes be used only during the comparatively dry summer months. Arnold's system had the virtue of year-round operation and low maintenance; he had combined the best features of the logging railroad and the motor truck. Unfortunately, the projected railroad using the Arnold system never had a chance to prove itself; hard luck and the Depression, together with small scale high financing conspired to keep the line from completion.

Arnold's first proposal was for a road tapping the timber land back of Molalla, in the northern part of the Willamette Valley; but in 1925 he went to Junction City, near the southern end of the Valley and interested various citizens in a new proposal to reach the vast stand of timber in the Lake Creek basin, about eighteen miles west of the town and just over the crest of the Coast Range. In the basin E. J. Horton had been operating for many years a small saw-mill, but roads were bad and hauling difficult so the mill could operate for only four or five months of the year. Yet in the Lake Creek area was a stand of four billion feet of timber, largely fir but with some red cedar. Moreover, several small hamlets serviced the remote farming area. Business, Arnold and his Junction City enthusiasts reckoned, would be good. The railroad from Junction City to the Horton mill would be equipped to handle twenty-car trains, each car capable of carrying five thousand feet of lumber; the operation of several trains daily would not exhaust the available timber within twenty-five years. But lumber was not all the line would carry. Yearly it could be expected to move 150 cars of hay, 20 of potatoes, 60 of apples, 30 of seed, 200 of forest products other than logs, 5 of hops, 75 of livestock, 60 of wood-pulp and excelsior stock, and 28 of eggs; to this would be added 5,000 cans of cream and 50,000 pounds of produce.[6] So Arnold and the Junction City business men capitalized the road for $187,000 and titled it impressively the "Arnold-Junction City-Horton Auto Rail Company." Shortly thereafter Arnold made a similar proposal at the city of Cottage Grove where he suggested a road up the Coast Fork of the Willamette River. This would cost $80,000 which was to be raised in Cottage Grove; for the sum Arnold would issue 49% of the stock of the company to the stockholders, retaining merely 51% for his patent rights. Conservative Cottage Grove lumbermen looked this gift-horse carefully in the mouth, did not like the appearance of the teeth, and, after riding the completed section of the Junction City road, said "no" very coldly.[7]

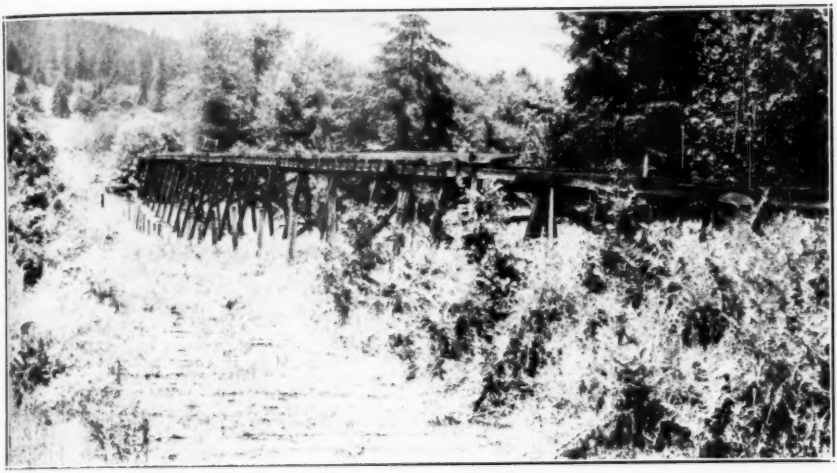
Junction City went ahead with a similar arrangement. Local business men bought $40,000 worth of stock at $10 a share, and work started. Arnold brought down his experimental locomotive from Portland, loaded it onto a truck and carried it out to Horton. There, the western terminal, construction began. The line climbed the sharp back-

[6] Junction City *Times*, January 31, 1926.
[7] Cottage Grove (Oregon) *Sentinel*, July 23, 1925.

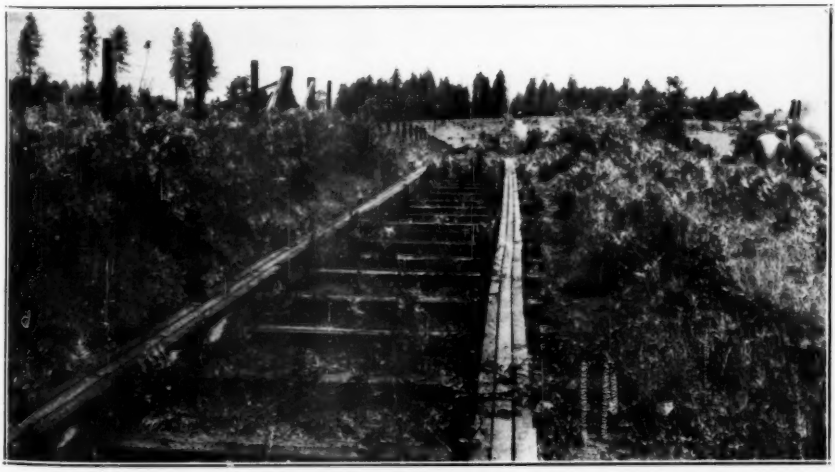
bone of the Coast Range by a twisting route to keep the grade to 4%; once the summit was reached, the grade was easier and followed the ridge above Bear Creek down into the flat land of the Willamette Valley; once it reached the floor of the valley the road struck due east to a terminal established on the Monroe-Eugene line of the Southern Pacific, although eventually it was to cross the steam line and continue into Junction City. Grading proved to be more difficult and expensive than first estimates had thought it, and many trestles and extremely sharp curves were needed. One trestle in particular presented a problem: not only was it necessary to span a gully seventy feet deep, but it was also necessary to build the trestle on a sharp curve. That the result was sturdy is proved by the trestle itself which still looms high above the county road, staunch and undecayed after ten years of abandonment. But engineers on the road thought otherwise of its firmness, as they rolled across it and other trestles on the line. Beneath them they could feel an unmistakable, ominous sway, and could hear creaking and groaning beneath the load. Caution overcame the natural daring of the brave locomotive engineers; perhaps it was the influence of the gasoline motor, but the operators believed in the better part of valor. When a locomotive approached the high trestle, its operator shifted to compound-low gear, set the throttle, and climbed deliberately down from the cab. While the locomotive and train crawled slowly out on the trestle, the engineer and the rest of the crew scrambled down one side of the gully and up the other. There they met the slowly moving train, climbed aboard it as it wormed past, and proceeded about their business on the firmer track.[8] The path worn by the crews up and down the gully can still be traced. For safety on the curves and trestles the wooden rails were topped by strips of thin iron, an interesting duplication in this, as in many other details, of the construction of a century before. Trestles were made, like the rails, of two-by-six planks spliced to form piles, bents, and stringers.

After the road was started, enough track was laid for demonstration purposes, so that during the fall of 1925 sightseers could enjoy the novelty of riding the line. National magazines ran articles on the construction; newspapers printed photos. A newsreel photographer took motion pictures. Enthusiastically, the directors of the A. J. C. H. A. R. met on January 2, 1926, and declared a 7% dividend out of profits from the sale of lumber. By March four miles were in operation. All during the spring track-laying continued. The locomotive, improved, showed ability to haul "immense" loads. Junction City decided it would celebrate the completion of the road by its own "Trail-to-Rail"

[8] Melvin Andrews, "Wooden Rails and a Gas Locomotive," *Junior Historical Journal*, Vol. I, (March, 1941), p. 196. To Mr. Andrews I am deeply indebted for much information on the road; during his work on his paper, which he did as a student in one of my classes, Mr. Andrews interviewed many of those who were associated with the Horton project, and he also retraced the grade of the road from Horton to Bear Creek. I have also received some additional information from the work of another student, Glen M. Anderson's "History of the Oregon Wooden Railroad," M. S.



A Low Trestle Near Bear Creek.



Section of Track near Bear Creek, showing construction of rails and ties. Photo May, 1939.

pageant, as Eugene was preparing to celebrate the completion of the Natron Cut-Off. To Junction City, the Wooden Railroad, as it was called, was just as important.

During the summer of 1926 the first cloud dulled the bright horizon of the company, and for reasons carefully obscured the organization was completely reworked: the Horton Lumber Company and the Arnold-Junction City-Horton Auto Rail Road Company were amalgamated and local officers assumed control. At the next meeting of the company, new officers were elected, Arnold was dropped completely by the company, and the name changed to the Horton Lumber and Timber Company. Dark rumors about the affairs of the company under the original promotor's control circulated through Junction City.[9] Work, interrupted during the reorganization, was resumed, but soon the company was out of funds. Crews working on the track received pay half in cash and half in stock; naturally they did not exert themselves too much under this arrangement. Finally the cash ran out entirely and by the spring of 1927 the work was at complete standstill. Nothing more was done until October, 1927, when O. K. Wright of Junction City was named General Manager by the Directors who at the same time worked out a plan for refinancing the project. At Junction City, the local newspaper said editorially, "The Times has never lost faith in the ultimate completion of this road. It will mean much to Junction City when operations begin."[10] Under new management the work seemed to be in earnest; slowly the end of track approached the crest of the hills, and grading progressed down the eastern ridge. During February of 1929 the third locomotive was constructed and taken to Horton where it began moving equipment to the railhead. All through the year the work went on, but slowly, very slowly.

Then in October fire, thought incendiary, broke out in the Horton Mill, completely destroying it at a loss of $50,000. With the mill burned 750,000 feet of lumber and the original locomotive of the railroad.[11] But the mill was hurriedly rebuilt and operations resumed. In March, 1930, when the lumber business was feeling the first squeeze of the Depression, the manager of the mill caught his sleeve in the set-screw of a pulley and was whipped around the shaft several times, bruising him badly, and breaking his arm. Finally, on July 8, the mill burned again, this time a complete loss. Again the Directors of the railroad had to turn to Junction City for help. Again the editor of the local paper spoke enthusiastically: "The Times considers the proposition of the Horton Lumber and Timber Company a reasonable one. Every business man in Junction City should get his money back in a short time from the increased business of having this payroll here. Let's get busy."[12] To make the stock offer more attractive, the Directors picked a site for the new mill—a very large, fine one—on the outskirts of Junction City,

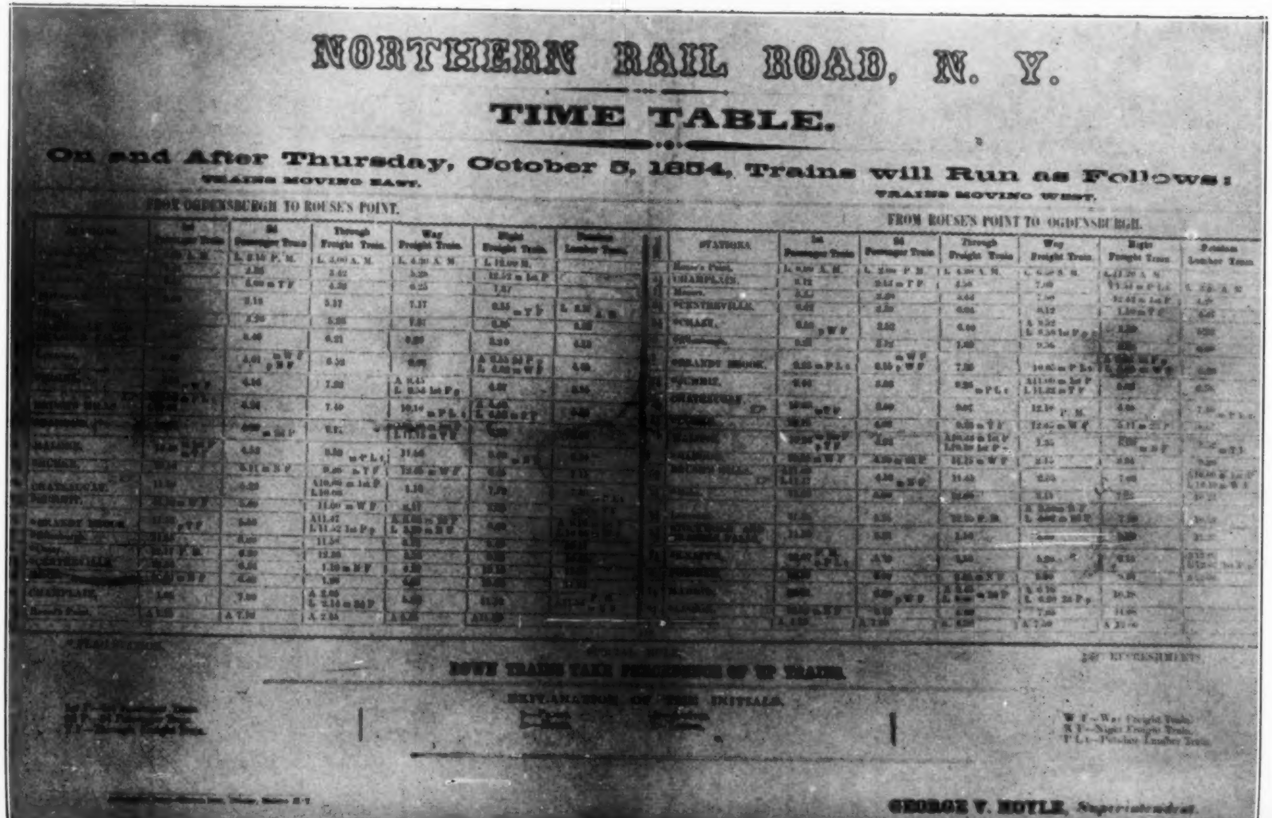
[9] Anderson, *op. cit.* p. 3.
[10] Junction City *Times*, Oct. 17, 1927.
[11] Junction City *Times*, October 31, 1929.
[12] Junction City *Times*, July 24, 1930.

near the Bear Creek station of the Southern Pacific's Eugene-Corvallis line. By September the mill was framed, the mill-pond and log chute prepared, and some machinery installed. The railway, now to bring logs rather than lumber from Horton, was hastened. Near the mill a stretch of track was built west across the flats to meet the advancing line from the crest. When winter came only about a mile separated the two stretches of rail. And that was the finish. Money, becoming tighter daily as the Depression continued, no longer was available. The Company announced itself bankrupt.

Immediately Junction City was thrown into panic. Everyone in town who had invested in the road, and few had not, rushed out to salvage what he could for himself. All that could be moved was hauled away from the road and unfinished mill; even the reinforcing steel strips on the rails at curves were pried up and carried off for old metal.[13] The locomotive was stripped of its useable parts; the frame and the cars were permitted to coast down the grade into the woods to crash at the end of the track. The parts are there yet, dismantled, everything not too unwieldy removed, a mere pile of wood and heavy iron junk.

Conspiring together were fire, financing, and the Depression to keep the road from success. Curiously the Horton line returned to the beginnings of American railroading for its construction with its wooden rails with metal surfaces, its wide wheels and flanges, its heavy wooden cars. In design the combination was of the latest in motive power and scientific theory with the oldest designs in railroading. Yet on the whole it did seem to offer a solution to a problem facing the lumber industry. Today, of that colossal wreck, only the trestles and strips of track remain, and deep in the continuous woods is a pile of wreckage, a monument to the noble experiment in railroading.

[13] Anderson, *op. cit.*, p. 8.



NORTHERN RAIL ROAD, N. Y.

TIME TABLE.

On and After Thursday, October 5, 1854, Trains will Run as Follows:

TRAINS MOVING EAST.

FROM OGDENSBURGH TO ROUSE'S POINT.

TRAINS MOVING WEST.

FROM ROUSE'S POINT TO OGDENSBURGH.

DOWN TRAINS TAKE PRECEDENCE OF UP TRAINS.

EXPLANATION OF THE INITIALS.

W F.—Way Freight Train.
N F.—Night Freight Train.
P Lt.—Potsdam Lumber Train.

GEORGE V. HOYLE, Superintendent.

Northern (N. Y.) R. R. Time table. Oct. 5. 1854.

The Malone Shops

By Lawrence Doherty.

A history of the Malone Shops must, of necessity, start in three places, two buildings in Malone, and one set in Ogdensburg. Due to factors to be explained shortly, these three locations became one at Malone and it is a general review of the life of these shops which is to be the subject matter of this article.

On May 14th, 1845, a charter was granted for the building of the Northern New York Railroad from Rouses Point to Ogdensburg, New York. In 1846 work was started and the first thru train reached Ogdensburg Sept. 20th, 1850, tho' trains had been operated over the completed parts of the line for some months previously.

The general offices of the road were established at Malone until 1870, when, due to certain official changes, the general offices moved to Ogdensburg. Because the general offices were in Malone, stockholders in Ogdensburg demanded that the main shops of the line be located there.

In the meantime, work had progressed on the shops at Malone to the extent that the stone walls had been erected, tracks laid, etc., but very little machinery was in place. When the main shops were established at Ogdensburg, the machinery was moved into the Malone freight house building and activities there for some years were of "light repair" type. I am told that the Malone shops were literally abandoned during this period and that wild blackberries, weeds, etc., in tangled profusion, were its only inhabitants, except the birds who nested within its walls.

In Ogdensburg, however, business was rushing and the shops operated full blast. It was here that the world's first refrigerator car was constructed. From these shops rolled new cars by the score, both light and heavy repairs were made to the locomotives and it appeared that these shops were to be the main ones for the whole road. This rosy dream, however, was destined to fade rapidly, for, another of the characteristic changes in directors took place, and it was decided to remove the shops to Malone. Some facilities were left at Ogdensburg for light repairs.

As a final word on the Odensburg angle of the Malone Shops, I quote from an Ogdensburg newspaper dated April 24th, 1861, "The Civil War's first Company from Ogdensburg left here today by rail for Albany, traveling by rail to Rouses Point, thence by lake steamer to Whitehall—." Gov. Morgan ordered that the 33rd Reg. N. Y. S. Militia be recruited and placed at Ogdensburg—. —They were to use the large buildings at "New Boston"—a part of Ogdensburg about a mile below the eastern limits of the city. These buildings had been formerly the property of the Northern N. Y. Railroad Company and had been used for the manufacture and repair of equipment—. —the buildings having been abandoned shortly before the Civil War except for some light repair work. The camp was named "Camp Wheeler" in honor of William A. Wheeler, president of the road."

When the shops opened at Malone things really began to hum. All machinery was located there, including that which for a time had been in the temporary shops in the freight house building. The original shops at Malone contained stalls for six locomotives, seven tracks for car repair and two tracks for locomotive building and repair, plus associated buildings, storehouses, etc. While the shops were at Ogdensburg they employed about 100 men and turned out a finished car daily. When the shops came to Malone the force was increased to about 150 men with a corresponding increase in output.

In 1864 the Northern N. Y. Railroad became the Ogdensburg and Lake Champlain Railroad, with a new inflow of capital. This reorganization had a natural effect on the Malone Shops, new and better equipment, increased forces and output and an even greater scope of activity. This new rush of activity slowed rapidly and almost halted altogether after the close of the Civil War due to the general depression. Except for occasional busy spells this condition was general until the Central Vermont leased the O. & L. C.

Beginning in 1873 the Central Vermont railroad acquired by purchase or lease some 700 miles of new trackage, including the O. & L. C. with its 118 miles. This large increase in mileage made the Central Vermont the largest railroad in the East and the seventh largest in the United States. Since the O. & L. C. route was one of the most important links with the West from the East, it is natural to suppose that the Malone Shops would be very busy. While this was true to an extent, account should be taken of the fact that the C. V. had embarked on a vast financial "sleigh ride." The cost of operation, the interest on outstanding indebtedness, bonds, etc., were eating into profits alarmingly. Such a top-heavy structure as the C. V. presented must and did topple in 1896, when the road entered receivership on May 23rd. In an effort to avert this receivership the management had combined many of the existing facilities as witnessed by the fact that the major portion of the equipment of the Malone Shops was moved to St. Albans for about two years, though some light repairing was done at Malone. The receivers continued to operate the road until April 20, 1896 when the C. V. was re-organized.

From 1896 to 1902 the Ogdensburg and Lake Champlain Railroad operated with small margins of profit. Naturally the Malone Shops made only such repairs and installations as were necessary to the actual operating requirements. In 1902, however, the Rutland Railroad Company purchased the O. & L. C. and a new era of prosperity came to the shops.

Before going on with the Rutland ownership let us look back a bit to the year 1876. The C. V. was in control and business, at least from a surface glance, was good. We find listed these men at Malone Shops—Euzebe Lalime, Master Mechanic (in charge of shops) Robert Whyte, Supt. of boiler shops, Lorin Houghton, and H. Foote, machinist foremen, R. C. Wentworth, carpenter foreman, Henry LaPierre, brass shop foreman, A. W. Weeks, roundhouse foreman, Jerome S. Perkins, roundhouse machinist foreman, etc., plus some 121 other employees. In the

year 1878 we find some facts on car movements. On the 19th of September, No. 13 a day freight train, handled 118 cars from Rouses Point to Ogdensburg (the report does not state how many engines were used but I can vouch for the fact that the engine John C. Pratt, engineer Brown, conductor Conley, did not handle that train unaided). During the month of November 1878, the report says "Cars originating at Ogdensburg for East movement 1,244. Arriving from west at Rouses Point 1,620. Originating Rouses Point for west 1,570 cars. Arriving at Ogdensburg 1,173 cars. Monthly total 12,282 loaded freight cars, 20,652 passengers handled; 9,886 empty cars (both passenger and freight handled) making a total of 33,920 car movements this month." I give these figures that you may see the probable extent of activities at the Malone shops, which, you will recall, were the only shops able to make car repairs, except emergency.

About the middle of August 1897 engine No. 35 was shopped for complete repair and overhaul. On September 9th, under the guiding hand of engineer Saxey Colvin the former No. 35 backed from the roundhouse to leave for Ogdensburg. There the engine remained for the night, all during which she was carefully checked and polished in preparation for the morrow, because, on the 10th of September, one up and coming young railroad man, by name E. A. Harriman, was to marry the daughter of the O. & L. C.'s president W. J. Averill, and this engine, now called the "E. A. Harriman" was to pull the first lap of the wedding trip, carrying only the private car of Mr. Averill. Neither the men at the shops, who had labored so faithfully to put this engine into first class condition, nor engineer Colvin who drove the wedding train, could know that this trip was to be the first grand move in the series of events which was to earn for E. A. Harriman the title of "The World's Greatest Railroad Man."

When the Rutland took over the O. & L. C., the Malone Shops moved toward its greatest period of activity. New equipment was installed, forces increased to more than double any previous output. Business was good and the limited quarters of the original shops were found inadequate to such an extent that in 1911 a large new unit was added. The new building had some twenty new tracks, served by a car conveyor and complemented by a score of new store sheds for lumber, parts, etc. In the new quarters cars of wood were re-built, new steel cars were fabricated, painted and sent out to the "trade." In the paint shops all types of cars were renovated under the direction of "Slick" Murphy, master painter, while Fred Perry was in charge of all repairs.

In the meantime other things were happening. A central heating plant was installed under the old car shops building with two boilers, one from the former engine "Chateaugay" and the other "W. J. Averill." These locomotive boilers were in use until 1937 when they were sold for scrap. A new electric turntable was installed and put in operation Jan. 30th, 1910, replacing the old "Armstrong" unit.

With the advent of World War I the Malone shops reached its most prosperous era. Additional small store buildings were erected, facili-

ties improved, employment increased markedly, changes in plant and structure were almost daily occurrences. With over five hundred employees in service, sidings lined with "cripples," sheafs of new car orders "up front," new trackage laid to accommodate the waiting cars, scrapping of old locomotives, and, with some major re-building jobs on hand it certainly seemed that at last prosperity had come to stay. During this period E. T. Worman was general foreman, Henry Todd, engine house foreman, Fred Perry, car and wrecking foreman, W. Murphy, paint foreman, etc. Prosperity was the key note, and, as the shops were prosperous, so also, was Malone. This prosperity was reflected, for example, in the fact that the shops' employees organized and operated a sort of co-operative market and grocery, with side-lines.

The post war period was one of slow, but gradual decline until one Spring morning when the walk-out of the general car men's union became effective. That was in 1922, if I recall correctly, and, from that day on, the decline was rapid. The whistle blew at 11:00 A. M. that day to signal the walk-out, and, as I stood on the freight house platform watching the men coming out, I felt that for most of these, they were through railroading. That I was right in this case, the records prove; the results of that ill-considered move are still felt in many an American home.

Business got a bit better along in '26 and '27 so the Rutland decided to install a new central heating plant to replace the old one which was proving more inadequate every day. Accordingly, four stalls on the east end of the roundhouse were converted into a boiler room, where a new heavy duty-boiler and a new 110 foot stack were built. New piping was laid throughout the whole plant and for a time things looked better. However, that heating job was the last constructive thing ever done at the shops.

"The depression of '28 did not affect us much up here for a couple of years as things were about as bad as they could be and still have anything in operation at all," one of the officials of the shops once told me. While this was true there were things happening which in the light of retrospection were more significant than we then realized. More and more cars went to Rutland for heavy repairs, more and more cars were being scrapped, cars which once would have been reconditioned. Here and there a shop track was taken up, certain stores materials were no longer sent here but had to be ordered from Rutland, a machine was moved occasionally to replace a damaged one in Rutland, etc.

The first concrete example of what to expect came in the form of an order, effective October 20th, 1933, which provided, effective that date and until further notice, engines would be stored and maintained by the New York Central Railroad Company at its Malone Junction roundhouse. On that day engines 15-23 and 45 were in the shops, and they, as well as incoming engines, were sent to the Junction.

During the Summer of 1937 we heard rumors of the shops closing soon. Heated discussions on the subject were general about town, since, rumor had it that the land upon which the shops were built, and in fact, the yards themselves had been given to the old Northern N. Y. Railroad

with the stipulation that the land should be the property of the Northern or its successors only so long as "the shops whistle would blow," that is, so long as an active shops were located at Malone. It is rather odd that none of the employees should have taken the trouble to look up the original deed as I did, for, had they done so they would have known the truth earlier. On page 372, Book of Deeds No. 19, under date of August 2nd, 1852, recorded August 16th, 1852, a warranty deed, without reservation except that a fifty foot strip of land south of the plot must be maintained as a roadway forever (now Railroad St.) was inserted. The plot contains about nine acres and cost $100.00 which the Northern N. Y. Railroad Company paid to Hiram Horton and wife Adaline Horton. The remainder of the Company land bought west of the river, and upon which the shops and yards are located was of 74.1 acres for which a warranty deed was given the Northern by Benjamin Clark and wife, for which the Northern paid $3,977.50.

On May 3rd, 1938 we read that the shops were closing indefinitely, effective May 12th, 1938—and close they did at 4:30 P. M. There were 51 men employed, at 4:31 there were 5 men, which included 2 car inspectors, 2 office clerks and one electrician, the car inspectors, incidentally, doing the watching nights, etc. Immediately on closing, and contrary to expectation, machinery was moved away, supplies were sent to Rutland and again, figuratively at least, the birds and weeds were its only tenants.

At first, rumors were that the closing was not permanent. When it became evident that this was wishful thinking, we heard that, a brewery, then an automobile factory, a bridge company, etc., each following the other in quick succession, were bidding for the plant. However, there have been a few storage items within its walls, but this, too, will soon be impossible unless extensive repairs are made, and, frankly, I doubt that they will be made. It is a sad picture one sees now, roofs falling in, windows broken, doors hanging, rain leaking in to rust once well-tended machines; one feels the damp, still, unused, silence of abandonment. Where once beat the throb of hammers, the whine of power saws, the roar of the planer, the hiss of the spray gun, the wet, smacking sound of belts over pulleys, one hears now only the chirp of the nesting birds and the lonely whine and whistle of the wind through open cracks.

There are not many facts to set down, dates to quote, names to recall, since most of the older records were burned in a fire which swept through the file room some years ago. Nor, having them, would they be important. The story told here is not of the Malone Shops alone, but of hundreds of other such places. The story of the rise and decline of these installations all over the country is parallel with the rise and decline of the private enterprise of our people; with the rise and decline of the so-called "middle class," who with strength in their bodies, love of duty and country in their hearts, the courage to work and to save for investment for America's betterment, a part of each individual's soul, were the essence of America. Perhaps it is too early to say this, but, I am sure we are agreed that the America of the days when these "shops" and hundreds of its kind flourished, is passing even as they are passing.

The U. S. Military Railroads

By Chas. E. Fisher

The part that our railroads have played in the armed conflicts of this and other nations has always been a great source of interest. It was in our Civil War that the value of rapid transportation for troops and supplies, then only afforded by the railroad, was learned by the military commanders.

Much has already been printed by our Government relative to the Civil War and much has also been written by other authors. To the writer, the most intriguing mystery has been the locomotives that served on the U. S. Military Railroads. Annual Reports of the railroads indicate they sold some of their locomotives to the Government, sometimes at a very good profit for themselves; records of the locomotive builders indicate they constructed many for these roads. Somewhere, deep in the files of the War Department, probably rests an inventory of all of this equipment. There it will probably remain until someone is willing to authorize its location. On the other hand, if we were interested in the vessels the Government chartered, a list was published carefully designating the type, owner, etc., including everything from a steamer to a skiff. A pity a similar list could not have been prepared and published for the U. S. Military Railroads!

In order to give our members a clear picture of the situation I shall reproduce at no little length the report rendered by Col. D. C. McCallum, General Manager of the U. S. Military Railroads, written in 1866.

"Upon assuming the duties indicated in the above order (order from Edwin M. Stanton, dated Feb. 11, 1862, containing his duties and appointment), I found only one railroad in possession of the government —that from Washington to Alexandria, seven miles long, and in charge of Captain R. F. Morley, assistant quartermaster.

"Previously, all passengers and freight had been transferred across the bridge by horse-power.

"In Alexandria the tracks had been laid through the city, to form a junction with the Orange & Alexandria railroad. The road was used regularly and continuously without interruption from this time forward until the close of the war, and on the 7th day of August, 1865, was surrendered to the Alexandria, Washington & Georgetown R. R. Co.

"The transportation from February 9, 1862, to August 7, 1865, three years, five months, and twenty-eight days, was as follows:

Number of engines run over the road for other than local construction purposes	8,983
Number of loaded cars	30,457
Number of empty cars	20,699
Total number of cars	51,156

Note:—The first item evidently means the number of trips made by all of the locomotives, not the total number of locomotives.

"In March, 1862, Major General McClellan instructed me to have a line examined for a railroad from Winchester, the terminus of the Harper's Ferry and Winchester railroad, to Strassburg, a station on the Manassas Gap railroad in the Shenandoah valley, and to make an estimate of the cost. This was completed early in April, but the railroad was not built.

"March 14, 1862, General McClellan instructed me to have five locomotives and eighty cars loaded upon vessels in the harbor of Baltimore, and held subject to his orders, with a view to using them in his contemplated peninsular campaign.

"They were purchased from northern railroad companies, loaded as directed and remained on the vessels until early in May, when they were sent to White House, Virginia, and placed upon the Richmond and York River railroad.

"Another engine was added in June to the number, and all employed in transporting supplies between White House and the front, which, toward the close of June, was twenty miles from White House and four miles from Richmond. Upon the withdrawal of the army of the Potomac to Harrison's Landing, June 28, all the rolling stock was destroyed or damaged, as far as practicable, to prevent it from falling into the hands of the enemy.

"Near the close of March, 1862, the Orange and Alexandria railroad was opened to Manassas Junction, twenty-six miles from Alexandria, and in April to Warrenton Junction, thirty-nine miles. In August, after relaying six miles of track and bridging the Rappahannock river, the road was opened to Culpeper, sixty-one miles, which at the time was the main depot for supplies of the army of Virginia. A few trains were run to the Rapidan river, eighty miles. Upon the retreat of General Pope, in the last days of August, the road was entirely abandoned, with the loss of seven locomotives and two hundred and ninety-five cars. In November it was reopened for a few days to Bealton, forty-six miles, and to the town of Warrenton, to supply the army of the Potomac on its march from Antietam to Fredericksburg.

"The Manassas Gap railroad was opened early in April, 1862, to Strasburg, sixty-one miles from Manassas, and eighty-seven miles from Alexandria. It was operated only a very short time from Strasburg, but continued in use to Front Royal, fifty-one miles from Manassas, through May and part of June, when it was abandoned. In November, 1862, trains were run over it to Front Royal for a few days, with supplies for General McClellan's army.

"The Alexandria, Loudon & Hampshire railroad was opened in the spring of 1862 to Vienna, fifteen miles from Alexandria, and used for transporting supplies to the fortifications south of Washington, and the camps along its line. During the first two weeks of September it was the principal line of supply for the army of the Potomac, when encamped near Washington after the second battle of Bull Run, and previous to the Antietam campaign.

"These four railroads comprise all that were operated as military lines from Alexandria to Washington. They were subsequently used, more or less, at various times, as will be mentioned hereafter, and continued to play an important part in the operations of the army of the Potomac.

"In April, 1862, the Richmond, Fredericksburg and Potomac railroad was opened from Aquia Creek to Fredericksburg, fifteen miles, and operated to supply the forces stationed at Fredericksburg. The road was abandoned September 7, with the loss of one engine, fifty-seven cars, and a small quantity of material. On the 18th of November repairs were again commenced, and the road was opened on the 28th to Falmouth, opposite Fredericksburg, and was used to supply the army of the Potomac until June, 1863. A very large amount of work was required, not only to the railroad, but to the wharves at Aquia Creek, all of which had been burned when this line was abandoned by our forces. The limited accommodations for receiving and delivering freight and passengers at Aquia rendered an increase of wharf-room and tracks necessary, and a new wharf, afterwards named Yba Dam, was completed in February, one mile below the Aquia Creek wharf, and the necessary tracks laid from the main road to it. Vessels drawing ten and one half feet of water could land at the new wharf at low tide, while there was only eight and one half feet at high water at the old one. This improvement proved a valuable acquisition to the means of supplying the army. The road continued to be used without interruption until June, 1863, when it was abandoned with small loss of material; but the bridges, buildings, and wharves were soon after burned by the enemy.

"The eastern portion of the Norfolk and Petersburg railroad was taken in charge July 20, 1862, and the gauge at once changed from five feet to four feet eight and a half inches for forty-four miles. At Suffolk, twenty-three miles from Norfolk, this line crosses the Seaboard and Roanoke railroad, running from Portsmouth, opposite Norfolk. A connecting track was laid between the two roads in August, 1862, and these lines were afterwards operated together. In May, 1863, about fifteen miles of track were taken up on the Norfolk and Petersburg railroad west of Suffolk by order of Major General Dix, and about the same length on the Seaboard and Roanoke. The two roads were afterwards operated to Suffolk, until the close of the war, for local military purposes, and were not identified with any of the great military operations or campaigns.

"In April, 1863, the Orange and Alexandria railroad was opened to Bealton, and used a few days to supply a force on the Rappahannock. The portion south of Bull Run was then abandoned, and on about the 15th of June the whole road outside the defenses of Washington was evacuated. July 18 repairs were recommenced and continued until the road was opened to Culpeper. Not having been much damaged by the enemy, the amount of work necessary to put it in running order was small. It was used until the first of October to supply the army of General Meade, after its return to Virginia from the Gettysburg campaign.

"Early in October it was again abandoned south of Bull Run, and was thoroughly destroyed by the enemy from Manassas Junction nearly to Brandy station, about twenty-two miles. Repairs were commenced October 23, and the damaged road opened, October 30, to Warrenton Junction, eleven miles, and to Culpeper, November 16, to which point it was operated during the winter, and until the final advance, under Lieutenant General Grant, of the army of the Potomac, May 4, 1864, when it was abandoned beyond Burke's station, fourteen miles from Alexandria. Rappahannock river bridge, six hundred and twenty-five feet long, thirty-five feet high, was rebuilt in nineteen working hours. The army of the Potomac remained in winter quarters on the south side of the Rappahannock, and received all its supplies for men and animals during the winter and spring over this single-track road.

"The Manassas Gap railroad was reopened to White Plains, twenty-three miles from Manassas, in August, 1863, and used for a few days to deliver supplies to General Meade's army, on the march from Gettysburg to Culpeper.

"On the 2nd day of July, 1863, military possession was taken of the Western Maryland railroad, from Baltimore to Westminster, in Maryland, thirty-six miles, which, from its position, had become the line of supply for the army of General Meade, at Gettysburg. Sufficient locomotives, cars, fuel, supplies, and men to operate it were brought from the military railroads of Virginia, the equipment belonging to the road itself being wholly inadequate. The road was restored to the owners July 7, the army having moved to the line of the Baltimore & Ohio railroad.

"July 9, 1863, full military possession was taken of the railroad from Hanover Junction to Gettysburg, thirty miles, and it was operated as a military line until August 1, to remove the wounded from the field of battle to distant hospitals. During military occupation, about 15,580 wounded men were transported over it. The equipment and men for this work were likewise furnished from the military railroads of Virginia.

"During the rebel occupation of central Pennsylvania in June, all the bridges were destroyed by them on the Northern Central railroad between Hanover Junction and Harrisburg, and several miles of track torn up on the Cumberland Valley and Franklin railroads between Harrisburg and Hagerstown, Maryland. The Virginia military railroad construction corps rebuilt the bridges of the Northern Central railroad. The materials for the same were furnished from the government yard at Alexandria, Virginia. The railroad company afterwards returned an equal quantity of material, the lumber amounting to 150,000 feet, board measure. The same construction corps also relaid a portion of the damaged track of the Cumberland Valley and Franklin railroads.

"As the war progressed, the nature, capacity, and value of railroads was better understood on both sides, and more systematic and determined efforts were made by the enemy against the lines used for transporting supplies to our armies. The destruction of track and

bridges was greater each subsequent time the roads passed within their military lines, and it became apparent that extraordinary preparations must be made to meet it.

"Early in 1863 a small construction corps was formed, consisting of about three hundred men, which was the beginning of an organization afterwards numbering, in the east and west, nearly 10,000. The design of the corps was to combine a body of skilled workmen in each department of railroad construction and repairs, under competent engineers, supplied with abundant materials, tools, mechanical appliances, and transportation.

"They were formed into divisions, gangs, and squads, in charge respectively of supervisors, foremen and sub-foremen, furnished with tents and field equipment. Storehouses were established at principal points, with ample stock of tools and materials.

"With the opening of the campaign in Virginia, in May, 1864, under Lieutenant General Grant, the Alexander railroad ceased to bear any important part. The Orange and Alexandria line was open to Rappahannock river, fifty miles, between September 28 and October 2, 1864, but at once abandoned back to Manassas. It was operated to that station until November 10, when it was abandoned back to Fairfax, sixteen miles from Alexandria.

"It was operated for that distance until the close of the war, and on June 27, 1865, was surrendered to the board of public works of Virginia.

"The Manassas Gap railroad was open from Manassas to Piedmont, thirty-four miles, between October the 3rd and 11th, and operated until October 27, 1864. Between that date and November 10, the rails were taken up between the above named stations and carried to Alexandria.

"On the 9th of May, 1864, repairs were again commenced on the railroad at Aquia Creek, and it was opened to Falmouth, fourteen miles, May 17.

"Potomac Creek bridge, seven miles from Aquia, four hundred and fourteen feet long, and eighty-two feet high, was built, ready for trains to pass, in forty working hours.

"The road was operated until May 22, principally for removing the wounded of the battles at Spottsylvania Court House. On that day it was abandoned, and not afterwards used as a military line.

"The Richmond and York River railroad was opened about the 1st of June from White House to Despatch, fourteen miles, and operated until June 10, when it was finally abandoned, the track taken up by order of Lieutenant General Grant, and the materials removed to Alexandria.

"Rolling stock for the Aquia Creek and York River railroads were sent from Alexandria on barges prepared with tracks for the purpose, and taken away in the same manner without loss or injury, when the roads were abandoned.

"Near the close of June, 1864, the City Point and Petersburg railroad was occupied to Pitkin station, eight miles from City Point.

"During the fall and winter of 1864 and 1865, eighteen miles of new railroad were built, passing around to south and southwest of the city of Petersburg, by which the armies of General Grant were principally supplied.

"The Richmond and Petersburg railroad was opened April 4, 1865, from Petersburg to the south bank of the James river, opposite Richmond, twenty-one miles, and was operated by this department until July 3, when it was turned over to the Virginia board of public works.

"The Petersburg and Lynchburg railroad was repaired between April 4th and 11th, to Burkesville, sixty-two miles from City Point, and used for a short time to supply the armies of General Meade and the paroled soldiers of General Lee's army. The gauge was originally five (5) feet, but not having proper rolling stock at hand, it was changed to four feet eight and one half inches. It was operated as a military road until July 24, when it was turned over to the board of public works.

"Shortly after the surrender of General Johnston's army, the Richmond and Danville railroad was opened to Danville, one hundred and forty miles, and operated for military purposes until July 4, 1865, when it, also, was surrendered to the board of public works.

"The Winchester and Potomac railroad was repaired from Harper's Ferry to Halltown, six miles, between August the 14th and 19th, 1864, to Stevenson, twenty-eight miles, between November 2nd and 24th, and was used to supply the army of General Sheridan, operating in the valley of Virginia. The iron used in the reconstruction of this line was principally taken from the Manassas Gap railroad. The bridges all were rebuilt. The road remained in charge of this department until January 20, 1866, when it was restored to the railroad company.

"The railroads in Virginia, Maryland, and Pennsylvania, used at any time during the war as military lines, the terminal stations on each while so used, and the number of miles operated, were as follows:

Names of Lines	*Terminal Stations*	
Alexandria & Washington	Alexandria-Washington	7 miles
Alexandria, Loudon & Hampshire	Alexandria-Vienna	15 miles
Orange & Alexandria	Alexandria-Mitchell's	68 miles
Warrenton Branch	Warrenton Jct.-Warrenton	9 miles
Manassas Gap	Manassas-Strasburg	62 miles
Richmond, Fred'ksburg & Potomac	Aquia Creek-Fredericksburg	15 miles
Richmond & York River	White House-Fair Oaks	20 miles
Richmond & Petersburg	Manchester-Petersburg	22 miles
Clover Hill Branch	Clover Hill-Coal Mines	18 miles
Richmond & Danville	Manchester-Danville	140 miles
South Side	City Point-Burkesville	62 miles
Army Line and branches	Pitkin, etc.-Humphrey, etc.	18 miles
Norfolk & Petersburg	Norfolk-Blackwater	44 miles
Seaboard & Roanoke	Portsmouth-Suffolk	17 miles
Winchester & Potomac	Harper's Ferry-Stevenson	28 miles
Western Maryland	Baltimore-Westminster	36 miles
Hanover Br. & Gettysburg	Hanover Jct.-Gettysburg	30 miles
	Total	611 miles

Of the 72 locomotives used on these lines, 48 were purchased in 1862; 18 purchased in 1863; 1 was built in 1862 and five were captured. Of their disposition, 67 were sold for cash; 3 returned to former owners and 2 were destroyed.

Not long ago one of our members turned over to this Society the time book of a Conductor on the U. S. Military R. R. Each page is devoted to the day's run, listing the names of the crew, the name of the locomotive and the car numbers of the train.

Pasted in the front of the book are time tables of the U. S. Military R. R., something I have never seen before. One dated December 28, 1863, effective at 3 o'clock A. M., indicates six trains each way daily between Alexandria and Brandy, a distance of 55 miles. Brandy was six miles north of Culpeper.

The odd numbers are assigned the southbound trains, the even numbers the northbound. The service consisted for four "through supply trains" in each direction; one "way supply train" in each direction and one passenger train in each direction. Service started at 3:00 A. M. when the first "through supply train" left Alexandria and made the 55 miles in 5 hours and 45 minutes. The passenger train did better making the run in two hours and forty minutes.

Meeting places are clearly indicated and we must remember that this single track carried a large number of trains. The limited telegraph facilities were used more for the movement of troops, not for trains. Their movement strictly followed the timetable. Furthermore, when extra trains were needed and despatched, the book indicates they left as first or second extra, or as many sections as were despatched of a regular train on the timetable. Only in this way, without use of telegraphic orders, could such heavy movements be made with safety, hence speed, according to these schedules, was sacrificed. It is quite plain from these records, that these trains moved in brigades. There were delays, of course, that was to be expected. One trip records the fact they ran over two cows at 8:25 P. M., killing both and damaging some of the machinery of the locomotive on one side and derailing eight cars. After getting the engine clear, they repaired the engine, went to Alexandria, reported, returned with the wrecking train, put the derailed cars on the rails and finally arrived at Alexandria at 1:15 A. M. Work for the Military R. R. was no "snap!"

The operations of the Military Railroads extended elsewhere and we can do no better than quote from the same report:

"The operations in Western Tennessee and Kentucky, and in north Mississippi, were distinct and separate from those at Nashville, and although under the control of the general superintendent at the latter point, they required and received very little attention as compared with the lines leading to the front.

"The Nashville and Chattanooga railroad, 151 miles, was the great main line over which passed all the supplies for the armies of the Cumberland, the Ohio, and the Tennessee, through the campaigns which terminated with the occupation of Atlanta. Over this single line of railroad the provisions, clothing, and camp equipage for the men, forage

for animals, arms, ammunition, and ordnance stores, re-enforcements, and all the varied miscellaneous supplies required for a great army engaged in an active campaign, were sent to the front; and by it were returned the sick, wounded, disabled, and discharged soldiers, refugees and freed men, captured prisoners, and materials deemed advisable to send to the rear.

"Portions of the road had been in use for military purposes since April, 1862, but I have not in my possession any data of the operations of this or any other military line of the southwest prior to February, 1864.

"About 115 miles of track were re-laid with new iron, cross-ties, and ballast from February, 1864, to the close of the war. Sidings were put in at intervals, to be not more than eight miles apart, each capable of holding five to eight long freight trains, and telegraph stations were established at most of them. In all nineteen miles of new sidings were added to this road, and forty-five new water tanks were erected.

"During the spring and summer of 1864, a few occasional guerilla raids were made upon it, but they caused little damage to property or detention to transportation. About September 1, 1864, the rebel General Wheeler destroyed seven miles of the road between Nashville and Murfreesboro. In December, General Hood destroyed seven and three-fourths miles of track and five hundred and thirty feet of bridges between the same stations. In both cases the road was promptly repaired and trains were running in a few days.

"The road was turned over to the company September 15, 1865.

"The next railroad in importance for military purposes was the Western and Atlantic, from Chattanooga to Atlanta, 136 miles. It was opened to Ringgold, Georgia, 21 miles from Chattanooga, in March, 1864. Early in May the work of reconstruction was commenced south from Ringgold, and kept pace with the movements of Sherman's army. The line was opened through to Atlanta in August, 1864, immediately after the evacuation of the town by the rebel army. In the reconstruction of this road 22½ miles of track and 4,081 lineal feet of bridges were rebuilt.

"The most important single structure was Chattahoochie bridge, 780 feet long and 92 feet high, which was completed by the construction corps in four and a half days. While occupied as a military road this was more infested by guerillas than any other during the war. Every device possible to apply was used to throw trains from the track, and, though occasionally successful, the preparations to guard against such attempts were so complete that few of them caused loss of life or more than a few hours' detention.

"Early in October, 1864, General Hood passed around General Sherman's army, and fell upon the railroad at several points in its rear. He destroyed 35½ miles of track and 455 lineal feet of bridges, but in thirteen days after he left the line it was repaired and trains were run over its entire length.

"Twenty-five miles of the track and 230 feet of bridges, in one stretch, between Tunnel Hill and Resaca, were constructed in seven and a half days. This was accomplished by working from each end of the

break, and at the same time working both ways from Dalton, which was reached by trains with material by way of Cleveland after relaying one and a half mile of track.

"When General Sherman commenced his march to Savannah, in November, the road between Atlanta and Dalton, 100 miles, was abandoned, the track from Atlanta to Etowah river, 46 miles, was torn up and destroyed, and from Resaca to Dalton, 16 miles, the rails were taken up and carried to Chattanooga.

"By order of Major General Thomas the road from Dalton to Atlanta was reconstructed, and between May 10 and July 4, 1865, sixty-six miles of track were laid, 36 miles repaired, and 3,553 lineal feet of bridges rebuilt.

"On the 25th day of September, 1865, it was turned over to the State of Georgia, to whom it originally belonged.

"The East Tennessee and Georgia railroad, from Chattanooga to Knoxville, 112 miles, was opened through in May, 1864, upon completion of Tennessee River bridge at Loudon. It had been used for three months previous by trans-shipping stores and passengers across the river in flat-boats. It was operated with great regularity during the entire military occupation of that region, except in August and September, 1864, when General Wheeler tore up 25 miles of track. It was speedily repaired and not molested afterwards.

"The Dalton branch, from Cleveland to Dalton, 27 miles, was operated in connection with the main line, and was of great service on several occasions. On the 28th day of August, 1865, the road and branch were restored to the company.

"The East Tennessee and Virginia railroad, from Knoxville to Bristol, was used and abandoned for short distances near Knoxville during 1864. The furthest point reached during the year was at Bull's Gap, 56 miles from Knoxville. By orders of Major General Thomas repairs were commenced near Knoxville March 4, 1865, and the road opened to Carter's station, 110 miles, April 23. Between those dates 12 miles of track were rebuilt, ninety-four miles repaired and 4,400 lineal feet of bridges reconstructed. It was turned over to the company August 28, 1865.

"The Nashville, Decatur and Stevenson line is formed of the Nashville and Decatur railroad, 120 miles from Nashville, south to Decatur, on Tennessee river, together with the eastern portion of the Memphis and Charleston railroad, from Decatur to Stevenson, 80 miles. Stevenson is at the junction of the latter railroad and the Nashville and Chattanooga, being 113 miles distant from Nashville.

"Although the distance via Decatur is 87 miles greater than by direct road, such was the pressure for transportation it was necessary to send return trains by that route from the front, until the capacity of the Nashville and Chattanooga line was sufficiently increased to accommodate the business. In June, 1864, all through trains were transferred to the main line.

"The Nashville, Decatur and Stevenson line was used for local purposes during the summer of 1864. About the first of September Gen-

eral Wheeler tore up several miles of the track between Nashville and Columbia, and late in September General Forrest destroyed several bridges and tore up a portion of the track between Athens and Pulaski. The whole length of the track destroyed in the two raids was 29½ miles. That between Nashville and Columbia was at once repaired, but between Pulaski and Athens it was not rebuilt until February, 1865. During Hood's Nashville campaign, in November and December, 1864, all the bridges then standing between Nashville and Decatur were destroyed, with six miles of track. The work of reconstruction was commenced on December 19, three days after the battle of Nashville, and completed to Pulaski, February 10, 1865. In addition to relaying the track, 7,055 lineal feet of bridges were built, consuming 1,045,675 feet of timber, (board measure.)

"Near the close of February, and again in March, most of the bridges were swept away by extraordinary floods, and were rebuilt, some of them twice, and many of them three times; and they were finally replaced by permanent truss bridges.

"The road from Stevenson to Decatur was restored to the company September 12, and between Nashville and Decatur, September 15, 1865.

"At the beginning of the war the Nashville and Northwestern had been completed to Kingston Springs, 25 miles from Nashville, and some work had been done upon it thence to Tennessee River.

"On the 17th day of February, 1864, the supervision of the work of construction was placed in my charge by order of Major General Grant. The road was connected through between Nashville and Tennessee River on the 10th day of May, 1864. On the 9th of August it was turned over to this department to be operated as a military line, by an order of Major General Sherman, issued by the authority of the President of the United States. At the terminus on Tennessee river, named Johnsonville, extensive arrangements were made to receive and transfer freight from steamboats to cars. Ample buildings and platforms were erected, and powerful hoisting machinery introduced. During the months of August, September, and October, the season of low water in Cumberland river, large quantities of supplies for the army were received and shipped over the road. It was very much exposed to attacks from guerillas, who at times inflicted considerable damage, and interfered with its operation. On the 4th of November, General Forrest planted batteries on the west bank of Tennessee river, and succeeded in destroying all the valuable buildings of Johnsonville, with their contents. On the 30th of November, the road was entirely abandoned, and the movable property on it taken to Nashville. During General Hood's occupation of the country, from December 1 to 16, all the bridges were destroyed. Repairs were commenced January 2, and the road completed through, February 13, 2,200 lineal feet of bridges were rebuilt. In February, March and April most of these bridges were swept away by floods, and rebuilt, some of them three times. In May and June, 1865, all were replaced by permanent truss bridges.

"On the 1st of September, 1865, the road was turned over to the railroad company.

"The Nashville and Clarksville line was formed of the Edgefield and Kentucky railroad, 47 miles from Nashville, and 15 miles of the Memphis, Clarksville and Louisville railroad. It was repaired and opened in August, 1864, by order of Major General Sherman, in order to have another railroad communication with water navigable in summer, to aid in supplying the Nashville depot.

"Important bridges were destroyed by floods at various times and rebuilt, until in April, 1865, when its use as a military road was abandoned, except on the 28 miles nearest Nashville. It was turned over to the company September 23, 1865.

"After the war closed the railroads leading south from Nashville were kept in active operation for some months, transporting paroled prisoners to their homes, and returning those who had been confined in camps north of the Ohio river, together with the movement of Union troops to be mustered out or take up new positions in Tennessee and Georgia.

"In 1862 several lines and many miles of railroad were operated for military purposes from Memphis, Tennessee and Columbus, Kentucky, but no reports or statements of their business have been in my hands.

"At Columbus, Kentucky, I found the Mobile and Ohio railroad open to Union City, 26 miles. It was abandoned about the first of May, 1864, at the time of Forrest's raid upon Union City, and not afterwards used, except in the immediate vicinity of Columbus, until May, 1865. It was reopened to Union City May 15, and to Crocket, 35 miles, May 31; and restored to the company August 25, 1865.

"The Memphis and Little Rock railroad, between Devall's Bluff and Little Rock, 49 miles, was the only line operated in Arkansas.

"It did not come under my control until May 1, 1865. It was then in very bad condition in consequence of the nature of the soil and neglect or want of skill in keeping up the necessary repairs. It was operated as a military line until November 1, 1865, when it was restored to the company.

"Statement of railroads operated in Tennessee, Georgia, Mississippi, Kentucky and Arkansas:

Name of Line	*Greatest No. of Miles Operated*	*Turned over to Owners*
Nashville & Chattanooga	151	Sept. 15, 1865
Nashville, Decatur & Stevenson	200	Sept. 15, 1865
Nashville & Northwestern	78	Sept. 1, 1865
Nashville & Clarksville	62	Sept. 23, 1865
Shelbyville Branch	9	Sept. 15, 1865
McMinnville & Manchester	35	
Mount Pleasant Branch	12	Sept. 15, 1865
Chattanooga & Knoxville	112	Aug. 28, 1865
Cleveland & Dalton	27	Aug. 28, 1865
Knoxville & Bristol	110	Aug. 28, 1865
Rogersville & Jefferson	12	

Chattanooga & Atlanta	136	Sept. 25, 1865
Rome Branch	17	
Atlanta & Macon	11	
Memphis & Charleston	75	Sept. 12, 1865
Mississippi Central	68	Sept. 12, 1865
Mobile & Ohio	35	Aug. 25, 1865
Memphis & Little Rock	49	Nov. 1, 1865
Louisville City	2	
Total	1201 miles	

The locomotives used on these military railroads numbered 260. 18 were purchased in 1862, 20 purchased in 1863, 154 purchased in 1864 and 2 purchased in 1865, making a total of 194 locomotives purchased. 66 locomotives were captured from 1862-1864 making a total of 260. 161 of these locomotives were sold to the southern railroads under Executive Orders, 32 were sold for cash, 65 were returned to their former owners and 2 were lost or destroyed in service.

Mention is also made of the fact that in October, 1864, all of the bridges on the Pacific railroad of Missouri and its southwestern branch were rebuilt, they having lately been destroyed by the rebels.

Turning again to the report of Col. McCallum, he writes:

"Under orders received from Major General McClellan, four locomotives and one hundred freight cars were sent to Major General Burnside at Newbern, North Carolina, in the months of June and July, 1862. On the passage two locomotives were lost with the vessel off Cape Hatteras, and two others were afterwards sent to replace them. One engine proving unserviceable was subsequently returned to Alexandria, Virginia, leaving three locomotives and one hundred cars in service. The road was worked under orders and by officers appointed by the general commanding the department, and did not come under my jurisdiction. I am therefore unable to give any account of its operation.

"When it was ascertained to what point of the coast General Sherman was directing his march from Atlanta, preparations were at once made to furnish him with railroad facilities. A portion of the construction corps from the division of the Mississippi, that had rebuilt the railroads during the Atlanta campaign, were ordered in December, 1864, to proceed to Baltimore by railroad from Nashville and embark for Savannah. Upon reaching Hilton Head, information was received that General Sherman would not use the railroads near Savannah, and orders were given to proceed to Newbern, North Carolina, and open the railroad to Goldsboro'. Eleven miles of the Savannah and Gulf railroad were opened and operated, with rolling stock captured at Savannah for local military purposes and to supply citizens of the town with fuel. The tracks and buildings of the Georgia Central railroad within the city limits were also used. Five serviceable and nine unserviceable locomotives, and two hundred and thirteen cars, about one-half of them damaged and unfit for service, were captured at Savannah.

"On the 20th day of June, 1865, all the railroad property was restored to the original owners by order of the department commander.

"A detachment of the Virginia construction corps was sent to

North Carolina by order of General Grant, and landed at Newbern January 30, 1865. The railroad at that time was in charge of the depot quartermaster at Newbern, and was in operation between Morehead City and Batchelor's Creek, forty-four miles. This construction force at once commenced rebuilding the bridge over that stream. On the 6th day of February the detachment sent from the military division of the Mississippi landed at Morehead City and relieved the force from Virginia, which returned to City Point.

"The railroad was required as fast as the army advanced, and was opened to Goldsboro', ninety-five miles, March 25, the day following the arrival of General Sherman and his army from Savannah.

"To provide another line of supplies the railroad from Wilmington to Goldsboro', eighty-five miles, was repaired and opened through, April 4.

"On the 10th of April movements were resumed toward the interior, and the railroad was opened April 19 to Raleigh, forty-eight miles from Goldsboro'. It was opened soon after to Hillsboro', and used until the parole of General Johnston's army was completed, when it was given up west of Raleigh.

"The total length of railroads opened and used in this department was as follows:

Name of Line	*Terminal Stations*	*Miles*	*Returned to Company*
Atlantic & North Carolina	Morehead City-Goldsboro'	95	Oct. 25, 1865
Wilmington & Weldon	Wilmington-Goldsboro'	85	Aug. 27, 1865
North Carolina	Goldsboro'-Hillsboro'	88	Oct. 22, 1865
Raleigh & Gaston	Raleigh-Cedar Creek	25	May 3, 1865

To work these lines, 5 locomotives were purchased in 1862, 2 purchased in 1863 and 10 in 1865; 21 locomotives were captured in 1865 making a total of 38 locomotives. Twenty-one locomotives were returned to their former owners; 2 were lost or destroyed; 12 were sold for cash and 3 were sold under executive orders.

The problem of rails was always a serious one. Made of iron, easily heated and wrapped around a tree by the destructive forces, the invading army used what they could. 21,783 tons of rails were purchased for the U. S. Military Railroads between 1862-1865 and rails were removed from the following roads:

Railroad	*Terminal Stations*	
Seaboard & Roanoke	Suffolk-Blackwater	14 miles
Norfolk & Petersburg	Suffolk-Blackwater	14 miles
Manassas Gap	Manassas-Piedmont	35 miles
Richmond & York River	Whitehouse-Chickahominy river	13 miles
Winchester & Fayetteville	Deckerd-Fayetteville	41 miles
McMinnville & Manchester	Near Manchester-McMinnville	26 miles
Mt. Pleasant Branch	Columbia-Mt. Pleasant	12 miles

In the table listing the delivery and the disposition of all of the locomotives of the U. S. Military Railroads, Col. McCallum reports as follows:

Year Delivered	*Purchased and Built*	*Captured*	*Total*	*Lost or Destroyed*	*Sold for Cash*	*Sold under Exec. Orders*	*Returned to Former Owners*
1862	72	40	112	4			
1863	40	14	54		3		
1864	154	17	171	2	9		
1865	47	35	82		95	164	101
1866					39		2
Total	313	106	419	6	146	164	103

A comparison of the totals furnished by Col. McCallum, for each district and compared with the above indicates a discrepancy somewhere. This is accounted for in part by his statement that contracts were placed for locomotives in the fall and winter of 1864 for the spring campaign of 1865 but the closing of the war made their use unnecessary. Thirty-five (35) locomotives and 492 cars of five feet gauge were built for the military division of the Mississippi and North Carolina. Fifty (50) cars of 4 feet 8½ inch gauge were also provided for Virginia and North Carolina. These thirty-five locomotives, all five feet gauge, were provided but were not used and were sold for cash.

This figure added to the totals shown in the different departments agrees with the above report. However, fourteen (14) captured locomotives are missing from the department reports. With these fourteen locomotives returned to their former owners and the thirty-five added to those sold for cash, the reports can be made to agree.

Upon the outbreak of the war, the roads taken over by the military authorities needed locomotives and equipment badly. At first this equipment was rented from railroads in the vicinity of Washington and we find B. & O., P. W. & B., N. C. and other roads lending their motive power and equipment. The government offered to purchase locomotives and subsequently placed orders with the various builders. Somewhere in Washington, in the files of the War Department, this information exists, but it is well nigh impossible to obtain it now. One list was published in our Bulletin No. 4 and the locomotives on that list were those used in the Military Departments of Tennessee and Mississippi. Only recently there turned up a printed document listing the locomotives used on the Military Railroads in Virginia and North Carolina. This document simply lists the locomotive number and name, cost and from whom procured. Under the latter heading is given either the name of the builder or the road from which it was purchased. All other data has been taken either from the records of the builders or from the Annual Reports of the railroad companies. Practically all were of the 4-4-0 type so that these figures and the cost will be omitted.

U. S. Military R. R. Locomotives in Virginia and North Carolina:

1	Ontario	Hinkley & Drury	# 204	1848	16x20"	46"	47000
2	Lincoln	Hinkley & Drury	# 164	1848	16x20"	54"	46000
3	Hoosac	Souther	.....	1854	16x20"	56"	54000
4	Champion	Souther	.....	1854	16x20"	56"	54000
5	Brattleboro	Hinkley & Drury	# 27	1844	13½x20"	60"	33000
6	Lexington	Hinkley & Drury	# 28	1844	13½x20"	60"	33000

The above six engines were purchased from the Fitchburg R. R.

7	Warrior	Rogers K. & G.	# 326	1852	15x22"	66"	

From Central R. R. of New Jersey - "Delaware"

8	Wyandank	Baldwin	# 555	1853	16x20"	48"	42000

From Long Island R. R.

9	J. H. Devereux	N. J. L. & M. Co.		?	15x22"	60"	52000
10	Scout	N. J. L. & M. Co.		?	No Data		
11	Waterford	N. J. L. & M. Co.		?	No Data		
12	No. 2	N. J. L. & M. Co.		?	No Data		
13	No. 1	N. J. L. & M. Co.		?	No Data		

From the costs, the first two engines were probably built new and the last three were acquired from railroads through the builder.

14	Vidette	Unknown		?	16x20"	69"	50000
15	Capt. Ferguson	Unknown		?	16x20"	69"	50000

From Messrs. Farnum & Durant. These gentlemen were associated with the Mississippi & Missouri R. R. These engines are not on the 1857 roster of that road and the cost indicates they were practically new.

16	Sentinel	Wilmarth	.....	1849	16x20"	60"	?
17	Job Terry	Hinkley & Drury	# 83	1846	15x20"	54"	41600
18	Speedwell	Lawrence M. S.	.....	1859	15x22"	54"	59000

From Old Colony & Fall River R. R. The "Sentinel" was the "Dorchester."

19	Panther	Hinkley & Drury	# 16	1843	13½x20"	36"	

From Boston & Worcester R. R.

20	Contest	Hinkley & Drury	# 196	1848	14x20"	69"	44000
21	Victor	Hinkley & Drury	# 203	1848	16x20"	69"	50000

From Nashua & Lowell R. R. Probably the "Rolla" and "Paugus" and listed as such.

22	Monitor	Souther	.....	?	16x20"	56"	54000

From Ellis, Newell & Co. Nothing further known.

23	Senator	Amoskeag	# 110	1853	15x24"	60"	54000
24	Epping	Souther	.....	1853	16x20"	66"	
25	E. J. M. Hale	Amoskeag	# 203	1856	16x22"	60"	
26	A. A. Bunting	Amoskeag	# 4	1850	16x18"	66"	46000

From Concord R. R. The "Senator" was the "Thornton" and the "A. A. Bunting" was the "Rob Roy."

27	Exeter	Hinkley & Drury	.....	1856	15x20"	54"	48000
28	Dover	Hinkley & Drury	.....	1856	15x20"	54"	48000

From Boston & Maine R. R.

29	D. C. McCallum	Mason	# 112	1862	15x22"	60"	54000
30	Washington	Baldwin	# 256	1846	15½x20"	46"	40000
31	Indiana	Baldwin	# 251	1846	15½x20"	46"	40000

The last two from the Philadelphia & Reading Ry.

32	Romeo	R. Norris & Son	.....	1862	16x24"	48"	58000
33	Spark	R. Norris & Son	.....	1862	?	?	?
34	Firefly	R. Norris & Son	.....	1862	16x"24	56"	57910
35	Hero	R. Norris & Son	.....	1862	?	?	?
36	Edwin M. Stanton	R. Norris & Son	.....	1862	18x22"	48"	59850
37	Samson	Baldwin	#1058	1862	18x22"	48"	56000
38	Union	Baldwin	#1061	1862	16x24"	50"	56000
39	Vulcan	Baldwin	#1063	1862	15x22"	60"	47000

40	G. A. Parker	Baldwin	#1064	1862	16x24"	60"	56000
41	Osceola	Rogers	#1025	1862	15x22"	54"	51300
42	President	Rogers	#1026	1862	15x22"	54"	51300
43	Gen'l. McClellan	N. J. L. & M. Co.		1862	16x24"	60"	56000
44	Col. McCallum	N. J. L. & M. Co.		1862	16x24"	60"	56000
45	Red Bird	N. J. L. & M. Co.		1862	16x24"	60"	56000
46	Government	N. J. L. & M. Co.		1862	16x24"	60"	56000
47	Secretary	Taunton	# 300	1863	15x24"	60"	56000
48	Chief	Taunton	# 288	1862	16x24"	60"	56000
49	W. H. Whiton	Mason	# 113	1862	16x22"	60"	55000
50	E. L. Wentz	Mason	# 117	1862	15x22"	60"	54000
51	Blue Bird	Baldwin	# 641	1855	16x22"	48"	46000
	The "Blue Bird" came from the Philadelphia & Reading Ry.						
52	F. Leach	N. J. L. & M. Co.		1862	16x24"	56"	56000
53	No. 136	Ross Winans		1853	19x22"	43"	48000
	From Baltimore & Ohio R. R., their #136.						
54	Robeson	R. Norris & Son		1862	16x24"	56"	57910
55	W. H. Whiton	R. Norris & Son		1862	16x24"	56"	57910
56	Madison	R. Norris & Son		1862	16x24"	56"	57910
57	Monroe	R. Norris & Son		1862	16x24"	56"	57910
58	Jefferson	R. Norris & Son		1862	16x24"	56"	57910
59	Washington	R. Norris & Son		1862	16x24"	56"	57910
60	Gen'l. Halleck	Rogers L. & M. Co.	# 998	1862	13x24"	56"	?
61	Eagle	N. J. L. & M. Co.		1862	16x24"	60"	56000
62	J. O. D. Lilly	Baldwin	#1072	1862	14x24"	56"	42000
63	Reindeer	R. Norris & Son		1862	16x24"	56"	57910
64	Manfred	R. Norris & Son		1862	16x24"	56"	57910
65	May Queen	R. Norris & Son		1862	16x24"	56"	57910
66	Pickwick	R. Norris & Son		1862	16x24"	56"	57910
67	Hiawatha	R. Norris & Son		1862	16x24"	56"	57910
68	Lion	N. J. L. & M. Co.		1862	16x24"	56"	56000
69	Tiger	N. J. L. & M. Co.		1862	16x24"	56"	56000
70	Zebra	N. J. L. & M. Co.		1862	16x24"	56"	56000
71	C. H. Vibbard	Baldwin	#1097	1862	16x24"	56"	56000
72	Gen'l. Dix	Baldwin	#1095	1862	16x24"	60"	56000
73	Fury	Rogers L. & M. Co.	#1047	1862	16x24"	54"	?
74	Buffalo	Rogers L. & M. Co.	#1050	1863	15x24"	54"	?
75	H. L. Robinson	Mason	# 123	1862	16x22"	60"	55000
76	Gen'l. Haupt	Mason	# 124	1863	16x22"	60"	55000
77	Gen'l. Burnside	Mason	# 125	1863	16x22"	60"	55000
78	Gen'l. Sickles	Mason	# 126	1863	16x22"	60"	55000
79	E. Corning	Taunton L. W.	# 302	1863	16x24"	60"	56000
80	Grapeshot	Taunton L. W.	# 301	1863	16x24"	60"	56000
81	Humming Bird	Baldwin	# 633	1855	16x22"	60"	55000
	The "Humming Bird" purchased from the Philadelphia & Reading Ry.						
82	Maryland	New Castle		1853	10½x16"	56"	20000
	From Philadelphia, Wilmington & Baltimore R. R.						
83	Gov. Nye	R. Norris & Son		1863	16x24"	60"	57910
84	Gen'l. Meigs	R. Norris & Son		1863	16x24"	60"	57910
85	Col. A. Beckwith	R. Norris & Son		1863	16x24"	60"	57910
86	C. Minot	N. J. L. & M. Co.		1863	16x24"	60"	56000
87	Commodore	N. J. L. & M. Co.		1863	16x24"	60"	56000
88	Gen'l. Couch	Taunton L. W.	# 299	1863	16x24"	60"	56000
89	Stuart Gwynn	Taunton L. W.	# 297	1863	16x24"	60"	56000
90	W. W. Wright	Rogers L. & M. Co.	#1087	1863	15x22"	60"	54000
91	Clark	No Data					
92	Northern Light	No Data					
93	Romulus	Norris		1840	10x18"	48"	24000
94	Rapidan	Virginia L. & Car Wks.		1856	16x20"	50"	61100
95	Fairfax	Smith & Perkins		1851	15x20"	60"	48300

In the majority of cases the origin of these locomotives is clearly given. Of the last five, the "Rapidan" and "Fairfax" were owned by the Orange & Alexandria R. R. and were seized at Alexandria. The "Romulus" was seized at Norfolk, Va., repaired and placed in service. She originally belonged to the Seaboard & Roanoke R. R. The "Northern Light" is credited as being built at the Government Shops in Alexandria. It seems more likely it was thoroughly rebuilt and this engine and the "Clark" were the two engines on the Alexandria & Washington R. R. The latter is a supposition, not a fact.

The report contains the disposition of some of these locomotives:

The "Wyandank," "Speedwell," "Ontario," "Lincoln," "Exeter" and 'Spark" were destroyed upon abandoning the Richmond & York River R. R. and the evacuation of White House, Va.

The "Red Bird," "President" and "Panther" were captured by the Confederates on the Orange & Alexandria R. R. and destroyed.

The "Hero," "Ferguson," "Job Terry," "D. C. McCallum" and B & O #136 were lost and destroyed during the retreat of the Union Army under Gen'l Pope from Manassas, Va.

The "A. A. Bunting" and the #12 were lost by the wrecking of the vessel enroute to Newbern, N. C. and the "Washington" was lost at Fredericksburg. Although lost to the Union cause, some were to appear subsequently.

Doubtless the military records contain the disposition of these engines but the only ones we find listed in their printed documents are the nine sold at Newbern, N. C. Here the "Secretary," "Grapeshot," "Lion" and "Webster" were purchased by the North Carolina R. R., the "Vulean" and "Scout" were purchased by the Atlantic & North Carolina R. R., the "Spark" and "Chief" by the Wilmington & Weldon R. R. and the "Ancient," purchased by a New York speculator for $1,655.00. One may well wonder where this old Norris engine of the A. & N. C. R. R. ended her days.

The Annual Reports of some of these southern roads throw further light on the problem. In the 1866 report of the Wilmington & Weldon R. R., we note that the "Commodore" and "Chief" have both been repaired and to be sold to the Orange & Alexandria R. R. The "Spark" is undergoing repairs, whether she remained on the road, we do not know. The "Job Terry" is listed as unfit for service but was not scrapped.

The Richmond & Danville R. R. report for 1866 indicates that engines numbered 27-31 incl. were formerly U. S. Military R. R. locomotives. #27 was the "Col. Webster," built by Manchester and formerly the property of the A. & N. C. R. R. #28 was the "Secretary," #29 was the "Job Terry," rebuilt by the Wilmington & Weldon R. R., #30 was the "Grape Shot" and #31 was one of the other Taunton engines.

The reports of the Orange & Alexandria R. R. indicate that the "Alexandria," built by Jersey City L. W.; the "Warrenton," "Virginia" and "Culpepper," built by the New Jersey L & M Co., and the

"Chief" built by the Taunton L. W., were all purchased from the U. S. Government.

Turning now to the list of locomotives on the Military Railroads of Tennessee and Mississippi, the roster published in our Bulletin #4, from Ex. Doc. #155, 39th Congress, 1st Session lists in the same way the original cost and from whom the engine was purchased. These engines were all five feet gauge and apparently never carried names. Some numbers are vacant on the list and subsequent information indicates that engines did carry these numbers. The list will be made up as the previous list but the numbers in () indicate the road to which the locomotive was sold at the close of the war.

1-13	Vacant					
14	Moore & Richardson		1859	16x22"	54"	55800
15	Moore & Richardson		1859	16x22"	54"	55800
16	Moore & Richardson		1859	16x22"	54"	55800
17	Moore & Richardson		1859	16x22"	54"	55000

The above four came from the Louisville & Nashville R. R. where they carried the same numbers. The L & N report for 1866 indicates that #16 was either returned or purchased by the L & N and was later rebuilt by the road in 1872.

18-20	Vacant					
21	R. Norris	.....		14x22"	60"	48000 (8)
22	No Data					(5)
23	Swinburne		1857	16x22"	60"	

The list states this engine purchased from the C & E R. R. I can find no road of these initials in the early sixties but the Chicago & Alton R. R. report states their #13 was sold to the Government and I have assummed that this is their engine.

24	Vacant						
25	Baldwin	1177	1863	14x24"	60"	43000	
26	Baldwin	1181	1863	15x24"	60"	49000	
27	Baldwin	1184	1863	15x18"	44"	40000	
28	Baldwin	1185	1863	15x18"	44"	40000	
29	Baldwin	1188	1863	11x16"	36"	20000	(5)
30	Baldwin	1191	1863	15x24"	56"	50000	
31	Baldwin	1189	1863	15x24"	56"	50000	
32	Schenectady	313	1863	14x24"	48"	?	
33	Schenectady	320	1864	14x24"	50"	?	(3)
34	Hinkley & Wms.	703	1863	?	?	?	
35	Hinkley & Wms.	704	1863	?	?	?	
36	Taunton	310	1863	?	?	?	
37	Taunton	311	1863	?	?	?	
38	Mason	149	1864	16x24"	60"	?	
39	Mason	150	1864	16x24"	60"	?	
40	Danforth Cooke & Co.		1864	?	?	?	
41	Danforth Cooke & Co.		1864	?	?	?	
42	Rogers L. & M. Co.	1118	1863	14x22"	48"	48000	(6)
43	Vacant						
44	N. J. L. & M. Co.		1863	15x24"	50"	56000	(8)
45	N. J. L. & M. Co.		1863	15x24"	54"	56000	(2)
46	N. J. L. & M. Co.		1863	15x24"	54"	56000	

47	N. J. L. & M. Co.		1863	15x24"	54"	56000	(2)
48	R. Norris & Son		1863	15x24"	54"	56000	(9)
49	R. Norris & Son		1863	15x24"	54"	56000	
50	R. Norris & Son		1863	15x24"	54"	56000	
51	R. Norris & Son		1863	15x24"	54"	56000	
52	R. Norris & Son		1863	15x24"	54"	56000	(3)
53	R. Norris & Son		1863	15x24"	54"	56000	
54	Vacant						
55	Rogers L. & M. Co.	1119	1863	14x22"	48"	?	(5)
56-58	Vacant						
59	Danforth Cooke & Co.		1864	16x24"	60"	?	(9)
60	Danforth Cooke & Co.		1864	16x24"	60"	?	(9)
61	Hinkley & Wms.		1864	15x24"	54"	?	(9)
62	Rogers L. & M. Co.		1864	16x24"	60"	?	(9)
63	No data						(10)
64-67	Vacant						
68	Schenectady	323	1864	16x24"	56¾"		
69	Schenectady	324	1864	16x24"	56¾"		
70	Rogers L. & M. Co.	1150	1864	16x22"	60"	?	
71	Rogers L. & M. Co.	1151	1864	15x22"	60"	54500	(4)
72	Rogers L. & M. Co.	1154	1864	16x22"	54"	54500	(4)
73	Rogers L. & M. Co.	1157	1864	16x22"	60"	58400	(4)
74	Schenectady	326	1864	16x24"	60"	?	
75	Schenectady	327	1864	14x22"	50"		
76	Schenectady	332	1864	15x24"	60"	52000	(1)
77	Schenectady	334	1864	15x24"	60"	52000	(1)
78	N. J. L. & M. Co.		1864	?	?	?	
79	N. J. L. & M. Co.		1864	?	?	?	
80	Danforth Cooke & Co.		1864	16x24"	60"	56000	
81	Danforth Cooke & Co.		1864	16x24"	60"	56000	(8)
82	Vacant						
83	Hinkley & Wms.	709	1864	?	?	?	
84	Hinkley & Wms.	713	1864	?	?	?	
85	Mason	158	1864	16x24"	60"	?	
86	Mason	159	1864	16x24"	60"	?	(8)
87	Taunton	316	1864	?	?	?	
88	Taunton	317	1864	?	?	?	
89	Taunton	318	1864	?	?	?	
90	Baldwin	1210	1864	18x22"	54"	56000	
91	Baldwin	1212	1864	17x24"	60"	56000	
92	Baldwin	1216	1864	17x24"	60"	56000	
93	Baldwin	1220	1864	17x24"	60"	56000	
94	R. Norris & Son		1864	16x22"	54"	60000	
95	R. Norris & Son		1864	16x22"	54"	60000	(6)
96	R. Norris & Son		1864	16x22"	54"	60000	
97-100	Vacant						
101	Amoskeag	121	1854	15x24"	54"	48000	(6)

Listed on the report as coming from the Michigan Central R. R. This was probably the "Stranger" on that road and listed accordingly.

102-114	Vacant						
115	Rogers	1149	1864	16x22"	60"	58000	
116	Rogers	1152	1864	16x22"	60"	58000	(8)
117	Rogers	1155	1864	16x22"	60"	58000	
118	Rogers	1156	1864	16x22"	60"	58000	(8)
119	Rogers	1158	1864	16x24"	60"	58000	
120	Rogers	1159	1864	16x24"	60"	58000	(8)
121	Rogers	1162	1864	16x24"	60"	58000	(2)
122	Rogers	1163	1864	16x24"	60"	58000	
123	Rogers	1164	1864	16x24"	60"	58000	(2)
124	Rogers	1165	1864	16x24"	60"	58000	(11)

125	Rogers	1166	1864	16x24″	60″	58000	(8)
126	Rogers	1167	1864	16x24″	60″	58000	(8)
127	Rogers	1168	1864	16x24″	60″	58000	
128	Rogers	1169	1864	16x24″	60″	58000	(12)
129	Rogers	1170	1864	16x24″	60″	58000	(12)
130	Danforth Cooke & Co.		1864	16x24″	60″	60000	(2)
131	Danforth Cooke & Co.		1864	16x24″	60″	60000	(2)
132	Danforth Cooke & Co.		1864	16x24″	60″	60000	
133	Danforth Cooke & Co.		1864	16x24″	60″	60000	
134	Danforth Cooke & Co.		1864	16x24″	60″	60000	
135	Danforth Cooke & Co.		1864	16x24″	60″	60000	
136	Danforth Cooke & Co.		1864	16x24″	60″	60000	
137	Danforth Cooke & Co.		1864	16x24″	60″	60000	
138	Danforth Cooke & Co.		1864	16x24″	60″	60000	(2)
139	Danforth Cooke & Co.		1864	16x24″	60″	60000	
140	Danforth Cooke & Co.		1864	16x24″	60″	60000	
141	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
142	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
143	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
144	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
145	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
146	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
147	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
148	New Jersey L. & M. Co.		1864	16x24″	60″	58000	(8)
149	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
150	New Jersey L. & M. Co.		1864	16x24″	60″	58000	
151	Baldwin	1231	1864	16x24″	60½″	55000	(8)
152	Baldwin	1232	1864	16x24″	60½″	55000	
153	Baldwin	1234	1864	16x24″	60½″	55000	(1)
154	Baldwin	1236	1864	16x24″	60″	55000	
155	Baldwin	1238	1864	16x24″	60″	55000	(1)
156	Baldwin	1239	1864	16x24″	60″	55000	(8)
157	Baldwin	1240	1864	16x24″	60″	55000	(8)
158	Baldwin	1241	1864	16x24″	60″	55000	(12)
159	Baldwin	1243	1864	16x24″	60″	55000	(1)
160	Baldwin	1244	1864	16x24″	60″	55000	(12)
161	Baldwin	1246	1864	16x24″	60″	55000	(1)
162	Baldwin	1248	1864	16x24″	60″	55000	(12)
163	Baldwin	1250	1864	16x24″	60″	55000	(12)
164	Baldwin	1252	1864	16x24″	60″	55000	
165	Baldwin	1253	1864	16x24″	60″	55000	
166	R. Norris & Son		1864	16x22″	54″	56000	
167	R. Norris & Son		1864	16x22″	54″	56000	
168	R. Norris & Son		1864	16x22″	54″	56000	(7)
169	R. Norris & Son		1864	16x22″	54″	56000	(8)
170	R. Norris & Son		1864	16x22″	54″	56000	
171	R. Norris & Son		1864	16x22″	54″	56000	(8)
172	R. Norris & Son		1864	16x22″	66″	56000	(7)
173	R. Norris & Son		1864	16x22″	66″	56000	
174	R. Norris & Son		1864	16x22″	66″	56000	(6)
175	R. Norris & Son		1864	16x22″	66″	56000	
176	R. Norris & Son		1864	16x22″	66″	56000	
177	R. Norris & Son		1864	16x22″	66″	56000	(8)
178	R. Norris & Son		1865	16x22″	66″	56000	(3)
179	Taunton	322	1864	16x24″	60″	56000	
180	Taunton	323	1864	16x24″	60″	56000	
181	Taunton	324	1864	16x24″	60″	56000	
182	Taunton	325	1864	16x24″	60″	56000	(11)
183	Taunton	328	1864	16x24″	60″	56000	
184	Taunton	329	1864	16x24″	60″	56000	(11)
185	Taunton	330	1864	16x24″	60″	56000	

186	Mason	164	1864	16x24″	60″	56000	
187	Mason	165	1864	16x24″	60″	56000	
188	Mason	166	1864	16x24″	60″	56000	
189	Mason	167	1864	16x24″	60″	56000	
190	Mason	168	1864	16x24″	60″	56000	(3)
191	Mason	171	1864	16x24″	60″	56000	(8)
192	Mason	172	1864	16x24″	60″	56000	
193	Mason	175	1864	16x24″	60″	56000	
194	Manchester	56	1864	16x24″	60″	56000	
195	Manchester	57	1864	16x24″	60″	56000	(9)
196	Manchester	58	1864	16x24″	60″	56000	(9)
197	Manchester	59	1864	16x24″	60″	56000	
198	Hinkley & Wms.	716	1864	16x24″	60″	56000	
199	Hinkley & Wms.	717	1864	16x24″	60″	56000	(1)
200	Hinkley & Wms.	718	1864	16x24″	60″	56000	(1)
201	Hinkley & Wms.	719	1864	16x24″	60″	56000	
202	Hinkley & Wms.	735	1864	16x24″	60″	56000	
203	Portland	117	1864	16x22″	60″	60000	(8)
204	Portland	118	1864	16x22″	60″	60000	
205	Portland	119	1864	16x22″	60″	60000	
206	Portland	120	1864	16x22″	60″	60000	
207	Vacant						
208	R. Norris & Son		1864	?	?	?	
209	R. Norris & Son		1864	?	?	?	
210	R. Norris & Son		1864	?	?	?	
211	L. C. & A. R. R.						
212-219	Vacant						

I can find no L. C. & A. R. R., 1864-1865, and this engine with those following may have come from either the Louisville & Nashville, Louisville & Lexington or Kentucky Central roads since the report states that 21 engines from these three roads were in service during April-June, 1864. Their use was temporary and they were subsequently returned to their owners but some may have been assigned U. S. M. R. R. numbers.

220	Mason	186	1864	16x26″	60″	56000	
221	Mason	187	1864	16x26″	60″	56000	
222	Mason	188	1865	16x24″	60″	56000	(8)
223	Mason	189	1865	16x24″	60″	56000	(8)
224	Mason	190	1865	16x24″	60″	56000	
225	Mason	192	1865	16x24″	60″	56000	
226	Mason	193	1865	16x24″	60″	56000	
227	Mason	197	1865	16x24″	60″	56000	
228	Mason	198	1865	16x24″	60″	56000	
229	Mason	199	1865	16x24″	60″	56000	
230	Mason	200	1865	16x24″	60″	56000	
231	Mason	201	1865	16x24″	60″	56000	
232-237	Vacant						
238	Taunton	338	1865	16x24″	60″	56000	(8)
239	Taunton	353	1865	16x24″	60″	56000	
240	Taunton	354	1865	16x24″	60″	56000	

U. S. M. R. R. locomotives sold to:
1—Alabama & Tennessee River R. R.
2—East Tennessee & Georgia R. R.
3—Macon & Western R. R.
4—Memphis & Charleston R. R.
5—Memphis & Ohio R. R.

6—Mississippi & Tennessee R. R.
7—Mississippi Central R. R.
8—Mobile & Ohio R. R.
9—Western & Atlantic R. R.
10—Wills Valley R. R.
11—Tennessee & Alabama R. R.
12—East Tennessee & Virginia R. R.

Further disposition of these engines is found in the report which states that

4 were sold to the Nashville & Decatur R. R.
5 sold to the New Orleans, Jackson & Great Northern R. R.
6 sold to the Selma & Meridian R. R.
2 sold to the Alabama & Florida R. R. and
1 New Jersey L. & M. Co. locomotive sold to the Mobile & Great Northern R. R.

Against some of these vacancies, we know that the Cleveland, Columbus & Cincinnati R. R. sold the "Iowa," Niles, 1853 and the "Franklin," Cuyahoga, 1851 to the U. S. military authorities. The "Niles" was sold to the Mississippi & Tennessee R. R. at the close of the war. The Bellefontaine R. R. sold the "Bellefontaine," Taunton, 1853 and on the Mississippi & Tennessee roster we find the "Rhode Island," H & F Blandy from the U. S. M. R. R.

On the Memphis & Charleston R. R. we find the following engines as possibilities from the U. S. Military R. R.:

"Empire"	Schenectady	1861
"Keystone"	Schenectady	1861
"Michigan"	Moore & Richardson	1861
"Tennessee"	Moore & Richardson	1861
"Ohio"	Niles & Co.	1854
"Maine"	Moore & Richardson	1856
"Connecticut"	Globe	1856

What roads were their original owners, we do not know, but we do know that the railroads of the mid-west sold many of their locomotives to the Government.

Lastly, the huge number of locomotives delivered in 1864 may have had nothing to do with the successful campaigns of that section. That was superior arms and strategy. On the other hand an army must be fed, clothed and must be highly mobile. The Civil War was the first war in which the railroad directly aided the troops.

Today we are facing a similar situation. For over a decade our policy has been to build inland waterways, super-highways and strangle our railroads, the lowest cost per mile transportation anywhere. We placed too much faith in the foreigner being able to defend his lines of commerce and not enough in our own railroads. There is nothing we can do about it now, if we make the same mistake again we deserve to lose all. We probably will go along the same paths that we trod before, oblivious to the hard lesson learned.

Yes, it was quite an array of locomotives the military authorities purchased to prosecute the war and they certainly played their part in supplying and moving the armies. And in times of peace the commerce of this nation should be permitted to move freely. Strangleholds on one form of transportation for the benefit of others, hurt all in the long run. What we must have is a comprehensive plan whereby each form of transportation that can function best in his particular niche will be permitted to serve there and all forms will work in harmony.

EDITOR:

In Mr. Hugh G. Boutell's fine article on the Chesapeake Beach Railroad in Bulletin 58, he refers to certain engines built by the Pittsburgh Locomotive Works for that road.

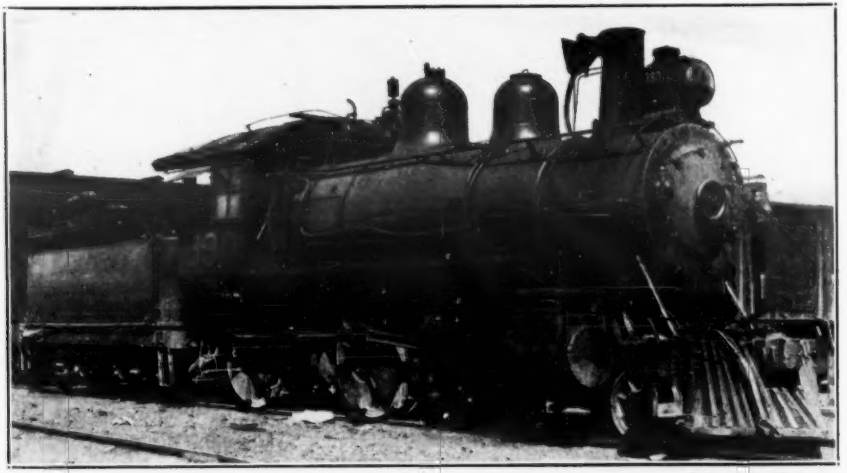
The Pittsburgh records show the following 4-4-0 locomotives built for the Chesapeake Beach;

Road No.	*Shop No.*	*Date Built*	*Dimensions*
2	1857	8-25-1898	68 18x24
3	1951	5-12-1899	68 18x24
4	1952	5-15-1899	68 18x24
5	1953	5-15-1899	68 18x24

Locomotives 3 and 4 were sold to the Denver, Northwestern & Pacific, later the Denver & Salt Lake and commonly known as the Moffatt Road. They appeared on the road during its early construction period, and since the financial interests back of the Chesapeake Beach were building the Moffatt Road, it is easy to see how the engines were sent to Denver. They bore the road numbers 390 and 391 on the Moffatt Road, and until they were scrapped in May, 1937, their builders plates remained intact on the boilers, and thereby enabled complete identification of their origin. Proving too light for regular passenger service, they were used as helpers, or on excursion trains when the load was light. Mr. Boutell saw the 391 at Utah Junction in 1906, and the writer saw one of them on a one-car excursion train in 1920. They were retired in 1930 and stood at Utah Junction in the dead line until they were scrapped.

On this basis, it is obvious that when the Chesapeake Beach needed more power, they bought a second engine from the Pennsylvania and numbered it 3, making a second 3 on the road. No second No. 4 was ever purchased so this number remained vacant from about 1904 on.

G. M. BEST.



-Courtesy of Otto C. Perry.

St. S. L. #390 at Tabernash, Colo. in 1922. Ex. C. B. Ry. 1st #3.

Worth Reading

Compiled by

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BOOKS AND PAMPHLETS

. . . *Claiborne and Polk Military Railway,* by Lt. W. J. Dixon, 711th Engineer Railway Operating Battalion, Camp Claiborne, La. [20] pp. including Map and Illustrations. Issued on July 11, 1942, when railway was completed by the 711th Engineers.

Estadistica Compendiada de los Ferrocarriles y Tranvias de Concesion Federal correspondiente a los Años de 1935 a 1939, compiled by Departmento de Ferrocarriles en Explotacion, Secretaria de Comunicaciones y Obras Publicas, Mexico. 157 pp. Index. Accompanied by folded map: ". . . Ferrocarriles de Concesion Federal Contruidos Hasta 1940." Issued by the Departmento, Mexico City, Mexico, 1942, and available on application to it.

Facts About British Railways in Wartime, 1942, by British Railways' Press Office, Waterloo Station, London, England. 40 pp. Issued in May 1942. "Passed for publication by the censor" p. 40.

Rail Transportation in War, by M. W. Clement, president, Pennsylvania Railroad. His address at dedication of the new Technological Institute, Northwestern University, June 15, 1942. Issued as Pennsylvania Railroad. For the information of the public. 10, 2 mimeo. 1. Printed in Railroad Data, June 19, 1942, p. 25, and as pamphlet with title: American Railroads Doing Their War Job, by Association of American Railroads, Washington, D. C.

The Railroads' Library, by Bureau of Railway Economics, Association of American Railroads, Washington, D. C. 23 pp. port.: Richard Holland Johnston, Librarian—"Chief" . . . "presides over the Railroads' Library today, as he has, with distinction, for a third of a century . . ." Available on request to BRE Library. "Increasing demands for information about transportation, not only in the United States but all over the world, . . . have led during the last two years to an intensified use of the Library of the Bureau of Railway Economics.

"In order that the nature and work of the library may be better understood . . ., this brief outline of its history, its holdings and its services is presented . . ." p. 3.

South African Railways and Harbours in Wartime, by South African Railways and Harbours, Johannesburg, South Africa. Cover-title,

48 pp. Illus. Available on request to the S. A. R., Johannesburg. *"There are 9000 Railwaymen on Active Service,* pp. 42-47, includes *In Abyssinia.* Further accounts of active service are in South African Railways and Harbours Magazine, June 1942, pp. 506-510—*A South African Railway Company at Work in the Middle East,* by E. S. P. Shirley, and July 1942, pp. 598-602, *South African Engineers Build Syrian Railways,* by W. M. C. Both articles illustrated.

[South American Railway Congress, Bogotá, Colombia, February 1941. Proceedings, Vol. II] 775 pp. incl. Illustrations, Tables, Charts. Published by Republic of Colombia, Imprenta Nacional, Bogotá, Colombia. No price given. Title in Spanish: Cuarto Congreso Sudamericano de Ferrocarriles. Tomo II—Trabajos correspondientes a las secciones A [Via y Obras], B (Material y Traccion], C [Explotacion] y D [Contabilidad y Estadistica]. Each paper [22 of them] accompanied by its summary by Congress reporters and Conclusions of the Congress. With the current interest in fuels and in railroad shops, the 2 following may be especially helpful: *Combustibles: Carbon, Petroleo y Leña y Sus Derivados,* by Instituto de Estudios Económicos del Transporte (Buenos Aires), pp. 205-246; *Notas sobre Talleres de Ferrocarriles,* by Neftalí Sierra, pp. 289-328.

The Story of Railroad Passenger Fares, by Clyde H. Freed. x, 299 pp. Washington, D. C., Mr. Freed, 613 Lexington Pl., N. E. $2.50. Part I outlines fares from pre-railroad days thru 1942 railroad fare increase. Part II contains a history of the Commerce Clause of the Constitution and of the Interstate Commerce Commission's decisions and orders, with chapter on "Pooling," pp. 179-190. Part III notes state regulations. Author is chief clerk, Ticket Office, Union Station, Washington, D. C.

ARTICLES IN PERIODICALS

The Contribution of a Railway in the Building of a Nation, by F. W. Collins. New England Railroad Club Proceedings, April 14, 1942, pp. 68-75. The Industrial Commissioner of the Canadian Pacific described "the part played by the Canadian Pacific Railway in the development of your sister nation, the Dominion of Canada."

Freight Progress in War Number, Railway Age, May 23, 1942. Its vol. 112: 973-1064 a, with 237 advertising pp. carrying out the theme of the issue. Editorial: Making Railway Service Adequate, pp. 973-975, 989, begins: "This is the most important issue of *Railway Age* ever published in its life of eighty-six years . . . It describes the greatest voluntary co-operative effort ever put forth by private industry in any country . . ."

The German Railway in Peace and War—An Analytical Study, by C. W. Whitworth. Journal of the Institute of Transport, London, England, April 1942, pp. 428-440. Illustrated.

Has Steam Still A Future In Railroad Transport? by R. M. Ostermann. Pacific Railway Club Proceedings, April 1942, pp. 6-16. Diagrams. "... I want to say to you that my answer to the question ... continues to be a decided 'Yes' ..." p. 7.

Railroad Motive Power of the Future—Significant Recent Developments in the Design of Steam, Diesel and Electric Locomotives. An Engineering Glimpse ... including the Possibilities of Radically New Types of Locomotives, by Frank B. Powers. New York Railroad Club Official Proceedings—Westinghouse Night—March 19, 1942, pp. 264-273.

Railroads Recruit Women Workers—They Have Made Good on British Railways on Many Jobs heretofore considered Suitable Only to Men, by Marie Deems. Railway Age, September 5, 1942, pp. 375-377. "... Women in railroading just mean more women power to help man power. 'The Army has its WAACS, the Navy has its WAVES; so why shouldn't the railroad have its WITS (women in transportation),' says the stove pipe committee," p. 377.

Unusual Railway Engineering Experience, by F. S. Bond. Railway Gazette, London, England, July 31, 1942, pp. 104-106. "As a result of the uncontrollable might of a river in Bengal, Eastern Bengal Railway engineers' duties are amphibious, and construction work is practically continuous." Maps of the Padma River country, the Eastern Bengal main lines and its various "Ghat" lines with notes of years in which they were used. Editorial note: *When Rivers Threaten Railways,* p. 98, mentions Missouri Pacific's experiences with the Brazos.

Watch Them Roll! Do You Want To Ship An Army Around the Country? Here's How It's Done and A Very Pretty Job It Is, by J. D. Ratcliff. Collier's, July 4, 1942, pp. 54-55, 69. Illustrated. "... The A. A. R.'s Military Transportation office dovetails with the Army's transportation office ...

Arthur Gass who runs the railroad office is a truculent little man who railroaded in France during the last war ... He knows the vast spiderweb of United States railroads—400,000 miles of track—and the equipment owned by each line ...

To get some idea of how his vast setup works let's suppose that General MacArthur has a specific job calling for a division of new troops ..." p. 54.

Early Railroad Travel

News gathering a hundred years ago was vastly different than it is today. Long trips were a serious undertaking and hazards were plentiful. It was not uncommon for a traveler to have an understanding with the editor of his home town weekly or daily newspaper, to supply him with news enroute or to furnish him with the accounts of his sojourn. This was usually paid for according to the amount of space or sometimes the writer's subscription was advanced for a certain period. Sometimes these letters contain considerable relating to early transportation and the one that follows, copied from the *Derby Journal* of 1847 and submitted through the kindness of Mr. C. B. Burr, gives an account of a traveler's experience of a trip from New York to Buffalo.

The journey consumed the better part of two nights and two days. He evidently was in error relative to using the Great Western Railway from Albany for the chain of railroads connecting Albany with Buffalo operated in connection with the Great Western Ry. of Canada to form a through route to Chicago and, even so, this road was not opened to Windsor until 1854. What the writer used was the line of roads across New York State comprising the present New York Central System.

Truly times have changed for the better since this journey was made but it may be of interest to recount the impressions made on one nearly one hundred years ago.

LOCAL NEWS

Correspondence to the Derby Journal
Sketches of Travel #1, Buffalo, October 1, 1847.

Leaving New York on board the splendid steamer *Hendrick Hudson*, I had the opportunity of viewing the beautiful scenery of the river by moonlight. The evening was lovely and the breeze came gently down the river bearing on its wings a thousand snow white sails of sloop and schooner. For miles the proud boat sped through this endless fleet of vessels. Returning to my berth, I found myself early in the morning at Albany, where after breakfast, I took the cars to Buffalo. Of the railroad from Albany to Buffalo I can say but little and that little by no means to its praise. Much as I had read of the Great Western Railroad, I had fancied it the best in the country. Never was I more disappointed. Dragging along all day over a crazy track of flat rail with a black, dirty looking engine of about the power of a cast iron teakettle, the cars shaking and rocking like a steamboat in a rough sea, I arrived at Auburn late in the evening and found myself tired out and not half way to my journey's end. I was almost inclined to dispense with any more riding on a rail for the present, but the bell rang and we take our seats and on, on, on through the darkness rattles the engine, like some dark emissary from the lower world, hissing and yelling and spouting

fire and brimstone 'til stunned by the noise and every bone in my body aching, I try to compose myself to sleep. But it's no use, no sooner could I get into half a doze than the jarring of the cars against each other would arouse us. We had come to a stopping place and by the time we were again on our way, "Show your tickets please," would be bauled in our ears by the gentlemanly conductor. As soon as I discovered the first evidence of day-break, I shook my companion nearest me by the shoulder and told him it was morning. He answered in a husky voice and stared at me with a most rueful countenance. "Wake up," said I. "Wake up," said he, "You don't think I've been asleep do you? It's an insult to a human being to suspect him of sleeping in a place like this." Just then the cars stopped and we found ourselves in Rochester. Here more trouble was in store for us. The western train had been gone about ten minutes and we were obliged to wait four hours for the next train. We engaged breakfast and strolled around the place for an hour. Visited Genesee Falls, or rather the place where the falls should be, for there was no water in the river at the time, and at 8 o'clock were again on our way. The road from Rochester to Buffalo I found much better than the Albany and Rochester road, and traveling at a handsome speed we arrived at our journey's end at 2 P. M., being 31 hours from Albany, a distance of 325 miles. A few years since, this would have seemed rapid traveling, if indeed it were not put down as a miracle, but this is a progressive age and owing to the facilities offered by steam at the present day, a journey which was formerly accomplished by a days hard labor is now merely a pleasure trip of a few minutes and if we fail to get over 320 miles a day, we think our suffering intolerable.

Buffalo is a great business place and is filled with pigs and Dutchmen. The streets to a New Havener appear filthy in the extreme and the people dull and sleepy. Tomorrow I shall visit Niagara Falls. I hope I shall not find them as dry as those of the Genesee, after which you may expect to hear from me again.

Yours with considerable esteem,

RAMBLER.

Back Bulletins

During the past six months there has been a steady call for our back bulletins, a great many being ordered by our "boys" in the army camps. Just who has been advising them of our publications or where or how they have learned about them, we do not know but we certainly appreciate their efforts. Naturally, these publications are furnished our "boys" at the membership rate and, in a few instances it has resulted in their becoming members of this Society.

This has made a steady drain on our back numbers and the supply of some issues is indeed limited. To a certain extent we all like to defer some things until "tomorrow." It is quite noticeable that as soon as we report a bulletin out of print in our annual report, a number of orders are received from our members who could and should have purchased this bulletin long ago. Some of them received rather a rude awakening this year to learn that the Southern Pacific bulletin, published in August, 1941, is now out of print. When these bulletins reach that stage, there is no direct way of supplying your wants—you should purchase them while they are listed.

The Society is not trying to force you to buy these back publications. We are simply calling your attention to the fact that these back bulletins are not like current magazines. The information they contain is just as timely as the day they were printed. They contain a wealth of information not found elsewhere. I would suggest that you get out our latest annual report, or if you have misplaced your copy, send for another, and check our list of publications. With the exception of the Southern Pacific bulletin, all can be furnished at the present writing, but, the supply of some issues will not last much longer. If any of the titles or articles appeal to you, purchase that back number now.

Just one more fact that is worth your consideration. We are engaged in an all out war. The last war we were fairly safe in this country but those of us who live along either sea coast realize that the vast stretches of water between us and our enemies do not make for safety. Neither are those who live in the mid-west entirely immune from this danger. If for any reason, our supply of back bulletins should be destroyed, they will never be replaced and your chances would be forever lost.

These are the present facts—act before it is too late!

New Books

"A History of the Texas Railroads," by S. G. Reed, 822 pages, 9x6. Bound in cloth. Published by The St. Clair Publishing Co., 3702 Mt. Vernon St., Houston, Texas. Price $3.50.

"The Republic of Texas lived and died without hearing the whistle of a locomotive!"

The author of this book was a student at Colgate University when his father, employed by the Federal government, was killed by the storm that destroyed Indianola, Texas, in 1886. The following year he entered the service of the Southern Pacific R. R. as a clerk in the traffic department. For forty-nine years he faithfully served the Southern Pacific and, upon his retirement he was the Freight Traffic Manager for Texas and Louisiana for the Southern Pacific Lines.

His railroad training has served him in good stead. The author knows what is important and he knows what to omit. His work is an encyclopedia of the history of Texas transportation. The railroads have played the major role—a chapter is devoted to the history of each, but the author has fashioned his material so as to make it mighty interesting reading. While it is true that the history of the individual roads makes up the greater part of this volume, the author commences with 1836, the year Texas won her independence from Mexico and closes with the year 1940. Chapters cover such subjects as river and wagon transportation, pools and agreements, rate-making, land grants, the free pass evil and the issuance of stocks and bonds. Short roads, long roads, those built and not built together with those chartered and operated and those not operated—all are included in this work—and, listed and indexed.

Too little is known of our railroad history, not only in Texas but in the great South-west. This book will find a valuable place in the library of any institution or individual. The years of research spent by the author are well indicated, both in his text and in his arrangement and he has left a noble monument of which he may well be proud after rounding out so many years of active railroad service in our largest state.

"This Fascinating Railroad Business," by Robert Selph Henry, 520 pages, 8½x5½, illustrated. Bound in cloth. Published by The Bobbs-Merrill Co., Indianapolis, Indiana. Price $3.50.

The author of this book needs no introduction to our membership and when he starts in to write about railroads we can rest assured that he will tell us much and in such a way that it will appeal to all of us. The author has done just that and perhaps a bit more.

In the first place, there is just enough of the historic to make it plain why things are done in the present fashion, a better way than taking present day methods for granted. Here the author has shown no little skill in selecting the salient points of history.

Next, the author has commenced with the evolution of the track, which is the foundation of any railroad, and in succeeding chapters has covered such subjects as rails, bridges, signals, all types of locomotives and cars, the back shops, terminals and the organization of the carriers.

To do this in plain, simple language, so that the lay man can easily understand the entire set-up was the task of the author. He has succeeded admirably and no matter if one is a railroad man or was a railroad man or is simply a "railroad fan"—he will know more about the vast ramifications of these carriers at the close of this book than he did at the outset.

One unique feature, heretofore unpublished, is a list of the Class I carriers, showing their earnings, mileage, equipment, employees, etc., all for 1939—a ready way to settle questions as to which road has more of this or that for a certain period.

The author has prepared an admirable book—one that should have a wide appeal not only to the railroad man who wishes to learn more of the entire subject but to the average lay man as well.

"THE STORY OF RAILROAD PASSENGER FARES," by Clyde H. Freed, 298 pages, 9x6, bound in cloth. Published by the author—Chief Clerk, Union Station Ticket Office. Washington, D. C., price $2.50.

The author of this book has presented a history of the passenger fare problem of this country in a very interesting fashion. Much has been written relative to railroad finance, corporate history, railroad motive power, but this seems to be the first venture in the field of passenger fares.

The book is divided into two parts. In its first six chapters are related the general conditions prior to 1887, 1887-1920, 1920-1936, 1936-1941 and 1942 to date. The second part commences with the history of the Commerce Clause of the Constitution in 1887 and in nine chapters treats of the regulation of the carriers by that body.

It is far from dull reading. Although the author refers to the various acts in his statements, he intermingles enough of the human side and events, gained either from his own experience or observations, to liven the reader's interest. In these days it is a bit difficult to believe that a ticket agent was once arrested, tried and sentenced to thirty days in a chain gang for collecting a fare prescribed by his company.

Times have changed—we hope for the better and the author has given us a good history of the development and what is behind that slip of pasteboard that permits us to travel on a train.

Monthly Publications

It has been the intention of your Editor to mention two of the monthly magazines that in their field are trying to serve the interests of the average railroad "fan."

Many of us remember the old "Railroad Man's Magazine" that was published about thirty years ago and then discontinued. To the mind of the writer this was most unfortunate because it has always seemed to him that in this broad country there was ample room for such a magazine without infringing in the field of the trade journals, the majority of which are too technical and do not contain enough every day railroading for this group.

A few years ago "Railroad Man's Magazine" resumed publication and now under the title of "Railroad Magazine" appears the first of each month. Starting out as a combination of fact and fiction articles, together with several departments, the Editors of this magazine, have in time, built up considerable knowledge by experience. The fiction has taken on a more sober but truthful tone, in fact in the past couple of years certain stories such as the one depicting James J. Hill on the Great Northern have been very well done. Certain fact articles have appeared, the most recent one by Mr. D. L. Joslyn, our Resident Western Director on "Locomotive Pilots" deserves especial mention. Locomotive rosters have and still are a department of this magazine and these with the short sketches and many departments make up the monthly consist. While the paper used leaves much to be desired the reproductions on the whole are clear and are varied to suit the many interests. Published at 205 E. 42nd St., New York, N. Y., this magazine sells for 25c per copy or a year's subscription may be had for $2.50.

A new venture in this field is the magazine "Trains." Although much smaller in the number of pages than the older magazine, a better grade of paper is used thus permitting better reproductions. "Trains" carries no fiction; it is made up solidly of fact articles and in the two years of its publication it has printed much that is of general interest. The magazine is published by the Kalmbach Publishing Co., 1568 West Pierce St., Milwaukee, Wisconsin. Single copies sell for 25c, one year's subscription for $2.50. Prior to his entering this field, Mr. Kalmbach published two monthly magazines devoted to model railroading.

It is not the purpose of the writer to compare one with the other. Comparisons are odious and what appeals to one may not appeal to another. That there is room in this country with its great number of railroad admirers for both of these magazines there is not the shadow of a doubt. Each magazine is doing a good job in its own field and each deserves success in trying to give the railroad "fan" a little better understanding as to what it is all about. May they both continue their efforts in this direction is our sincere wish.

Index

MATERIAL APPEARING IN BULLETINS 52-59 INCL. 1940-1942

In the period covered by this index, the special bulletins were as follows:

No. 54—History of the Wisconsin Central R. R.
57—The Two Footers.

The following extra bulletins were published:
The Railroad in Literature (RR-Lit)
Locomotives of the Southern Pacific Co. (SP) Now out of print.
Vermont Central-Central Vermont (CV)

Lists of locomotives that have appeared in contributions will be found in the above index listed under "Locomotives."